The Builder.

VOLUME III.

SATURDAY, JANUARY 4, 1845.

ADDRESS.

THE issue to-day the hundredth Number of THE BUILDER, and commence with it a new year. Our progress up to this time has been in the highest degree satisfactory; friends have grown up around us on all sides; the goodness of our purpose has been universally recognized; and we consequently now find ourselves in a position to effect much more than we have yet attempted. Of this position we shall vigorously avail ourselves, and will spare no pains or outlay to render this journal *the* organ, *par excellence*, of the numerous and influential classes interested in architecture, building, engineering, archæology, practical science, and the decorative arts.

We are making such arrangements as will ensure for our readers the earliest and most authentic information on all subjects whereof THE BUILDER treats, both foreign and domestic, with sound and impartial opinions on the various matters which may come before them. New buildings, new materials, new processes, and new books, will be described and illustrated. As regards the latter, it is a constant complaint amongst provincial architects and builders, that having nothing to guide them in their purchases, they are led to order from London works which are of no use to them, and more often to refrain from buying those which, if they had a general notion of their contents and worth, they would gladly possess. We shall endeavour to supply this deficiency: and being untrammelled by any connection with publishers, shall do so fearlessly and honestly; with a disposition at all times to hold out a friendly hand to rising merit, and to give praise rather than censure, but with a resolute determination to shew no mercy to the shallow empiric or the egotistical pretender.

The properties of materials, and all new modes of construction, we shall be anxious to investigate; and we invite the earliest intelligence on these points, so that we may place the result of inquiry before our readers.

The new Metropolitan Buildings-Act, which came into operation on the 1st instant, will necessarily be liable for a time to various readings, and will offer some disputed points. Our pages will be open for the discussion of them, and consideration will be given to such questions as may arise. The health of towns, to which this Act materially refers, has always received from us the attention that the importance of the subject demands: it will continue to form a prominent feature in our journal, and we shall aid resolutely every endeavour that may be made with that end in view. Against faulty modes of construction, unfortunately numerous and general, we shall continue to wage war,—one great object of THE BUILDER being the introduction of sound principles in building, and the dissemination of practical knowledge. The improvement of dwelling-places is an object of national importance.

Close pursuit of the useful will not, however, prevent attention to the beautiful, indeed the connection is too intimate to admit legitimately of separation.

"Taste never idly working, saves expense."

It must be constantly remarked that architecture as a fine art is much less understood by the public than as a useful art, whence it follows that our advance in matters of taste is much slower than in matters of utility. It will be our aim from time to time to diffuse a knowledge of the principles of architectural criticism and to cultivate the taste of our readers so far as it may be in our power to do so. The preservation of ancient remains, the proper conduct of societies devoted to architecture and archæology, and the due administration of *competitions*, will be specially regarded by us, and strenuously advocated. On all these points public opinion is now very different from what it was even ten years ago, and we believe we shall materially aid in obtaining a satisfactory result by concentrating information relating to them, and exposing unflinchingly, every instance of tergiversation which may become known.

We have a wide field, and strong determination: with that co-operation on the part of those interested in these matters that we have a right to expect, and which the present editor, commencing a new task, earnestly solicits, we cannot fail to effect much good.

WE ASK THIS CO-OPERATION, KIND READER, FROM YOU YOURSELF.

MODEL (?) HOUSES FOR THE LABOURING CLASSES.

IN THE BUILDER for December 21st, we drew attention to a statement and engraved plan of fifteen houses for the labouring classes, recently issued by the society for improving the condition of that part of the population. From this we learn that:—

"The committee, feeling that no description or reasoning, however accurate, is likely to make such an impression on the public as an actual experiment, had resolved to build a certain number of houses as models of the different kinds of dwellings which they would recommend for the labouring classes in populous towns; and for that purpose had taken, on reasonable terms, an eligible plot of land between Gray's-inn-road and the Lower-road, Pentonville, on the estate of Lord Calthorpe, and had commenced, under contract, the erection of the buildings shewn on the plan.

"In the arrangement of these buildings, the object had been to combine every point essential to the health, comfort, and moral habits of the industrious classes and their families, reference being had to the recommendations of the Health of Towns' Commission, particularly with respect to ventilation, drainage, and an ample supply of water."

Anxious to examine the society's first work, constructed with such an end in view, we hastened to the site of the new houses—the *model* houses near the Bagnigge Wells Tavern. We regret to say, unaffectedly and seriously, that our worst anticipations are confirmed. The arrangement is a disgrace to the society, and cannot surely have been seen by Lord Ashley, the chairman of the committee.

In the Buildings Regulation Bill, brought in by that excellent nobleman in conjunction with Mr. Fox Maule and Mr. Tufnell, Feb. 1842, it is set forth most justly "that it shall not be lawful to build any new court or alley (except mews and stable-yards) narrower than 30 feet, through which there shall not be an open passage at each end thereof at least 20 feet wide, and entirely open from the ground upwards." And in the new Metropolitan Buildings Act, it is actually provided that no court or alley shall be built without "two entrances thereto, each being at the least the full width of the alley." Will it be believed then, by our readers, it certainly was not by ourselves when we first saw it even with our own eyes, that these houses now in course of erection, *model* houses remember, to which the society are to appeal when endeavouring to persuade some money-loving landlord to build in a manner more conducive to the health of the future occupiers than to the increase of his revenue, are actually arranged to form *a court open at one end only*, AND LESS THAN 23 FEET IN WIDTH AT THE WIDEST PART!! The plot of ground on which the fifteen buildings are crammed is so small, that, notwithstanding this proximity, the yard attached to each house is literally what its name imports in feet, or very little more.

We call most urgently on the committee and the shareholders to prevent the consummation of this most dangerous mistake, or they will rear a hot-bed for infection, and throw a great impediment in the way of that improvement which they profess to seek. The houses on one side are nearly roofed in; those on the other side have merely the footings laid; and we trust our contemporaries of the press will aid us with their powerful voices in our endeavour to prevent the completion of the plan as at present contemplated. If we were not assured that the income derived from these buildings would be devoted to the general objects of the society, we should say, that mammon had fought against facts, judgment, and common sense, and, to the discredit of all concerned, had gained the day. We hope there may yet be time to modify the evil.

CURIOUS ARCHITECTURAL REMAINS IN BOW CHURCH-YARD.

At the Society of Antiquaries, on Thursday, 19th ultimo, a paper was read from Thomas Lott, Esq., F.S.A., noticing some subterranean architectural remains (being stone vaultings of substantial masonry) beneath the houses in Bow church-yard, City, of a very interesting character, although of a much later date than the celebrated Norman crypts at present existing under the church.

Beneath the house No. 5, occupied by Messrs. Grocock, is a square vaulted chamber, 12 feet by 7 feet 3 inches high, with a slightly pointed arch of ribbed masonry, similar to some of those of the old London-bridge. There had been in the centre of the floor an excavation which might have been formerly used as a bath, but which was now arched over and converted into a cesspool. Proceeding towards Cheapside, there appears to be a continuation of the vaulting beneath the houses Nos. 4 and 3. The arch of the vault here is plain, not ribbed, and more pointed. The masonry appears, from an aperture near to the warehouse above, to be of considerable thickness. This crypt or vault is 7 feet in height from the floor to the crown of the arch, and is 9 feet in width and 18 feet long. Beneath the house No. 4 is an outer vault. The entrance to both these vaults is by a depressed Tudor arch with plain spandrils, 6 feet high; the thickness of the walls about 4 feet.

In the thickness of the eastern wall of one of the vaults, are cut triangular-headed niches, similar to those in which, in ancient ecclesiastical edifices, the basins containing the holy water, and sometimes lamps, were placed, instances of which are seen in Old Stepney Church, and many other buildings of the same period.

These vaultings appear originally to have extended to Cheapside, for beneath a house there, in a direct line with these buildings, and close to the street, is a massive stone wall.

The arches of this crypt are of the low pointed form, which came into use in the 16th century.

There are no records of any monastery having existed on this spot, and it is difficult to conjecture what the building originally was; Mr. Chaffers thought it might be the remains of the crown sild, or shed, where the sovereigns repaired to view the joustings, shows, and great marching watches, on the eves of the festivals.

Accompanying his communication Mr. Lott had sent two old deeds, being grants by letters patent from Henry VIII., with impressions of the great seal attached, on which he had stumbled in his researches as to the existence of any monastery on this spot. One of these deeds excited great interest, inasmuch as the splendidly illuminated margin contained a portrait in colours of the king, which, from the care bestowed on its execution, and its resemblance to the heads on the coinage of the period, might possibly be a good likeness of the absolute monarch.

Mr. Lott also laid on the table the ancient silver parish seal of St. Mary-le-Bow, representing the tower of the church as it existed antecedently to the Fire of London, with its bows or arches of stone, and five lanterns therein, intended to have been glazed, and lighted at night to guide the passengers across the ferry of the Thames.

DISTRICT SURVEYORS' ASSOCIATION.

"A chiel's amang ye, takin' notes,
An' faith, he'll prent 'em!"

The anniversary dinner of this association took place on Monday last, at the Freemasons' Tavern, when forty gentlemen sat down, and H. E. Kendall, Esq., took the chair, supported by Professor Hosking, the official referee appointed under the Metropolitan Buildings Act. Mr. Baker, hon. sec., read the friendly apologies of Mr. Higgins, the other official referee, and of Mr. Symonds, the registrar, for their unavoidable absence.

After the usual toasts, the Chairman alluded to the great gratification which the presence of Mr. Hosking gave to himself and to the meeting, and proposed the health of "The Official Referees and the Registrar."

The toast having been received with cheers, Mr. Hosking thanked the society for the compliment paid to him, and expressed much pleasure at having received their invitation; it was an earnest that, under the new circumstances in which they would soon be relatively placed to each other, he should receive their co-operation; they would all shortly be in the same boat together, and when he considered the great experience of many members of the Association, and the attention which they had bestowed upon the new Act, he hoped to derive great benefit from their assistance. If, however, in the performance of his office, he should be compelled to differ in opinion from them, or to exercise any of the powers which the law gave him over their appointments and their duties, he was glad to have this opportunity afforded to him of shewing the usual feeling of an Englishman, who always shakes hands before the fight. (Cheers.) With some complimentary observations, he then proposed, "Prosperity to the District Surveyors' Association."

The Chairman having acknowledged the toast, briefly gave, "Mr. Donaldson and the newly-elected Surveyors."

Mr. Donaldson said, that the duties of the new surveyors would be comparatively light, for whenever any case of difficulty arose, he should not fail to call in Trafalgar-square for proper directions (a laugh); so that, what with following the example of the senior surveyors, and the advice of the official referees, the path would be clear, and easily pursued.

The Chairman then said, it would be recollected that, three weeks ago, Mr. Baker, the honorary secretary, had stated his intention to resign the office, and assigned his indisposition alone as his reason for doing so. The association felt that much was due to their esteemed friend, not only for the efficient manner in which he had for so long a period performed the duties of his office, but for his exertions at the formation of the society. A committee was therefore formed, and it was unanimously agreed to present him with a silver salver, having an appropriate inscription. However inadequate the gift, he now begged to present it in the name of the association, and to couple with it, a bumper to "Mr. Baker's health."

The toast having been received with cheers,

Mr. Baker said, that though he had been led to expect this mark of kindness at their hands, he was, nevertheless, but ill prepared to express, in appropriate terms, his grateful sense of it. Returning thanks seemed, at first sight, an easy task, but when the heart was full, no one knew, until he tried, how difficult it was to clothe gratitude with words. On this account, he begged for their forbearance, for like Trotty Veck, he found "every word swelling in the throat to the size of the whole alphabet." Imperfect, however, as he might express it, he assured them that his gratitude was at least sincere, and that he felt deeply indebted to all,—to those whom an intercourse of many years had impressed him with the knowledge of their worth and their good fellowship, and also to those new members, who, uncalled for and unlooked for, but not uncared for, had voluntarily come forward on this occasion. He valued the inscription upon the plate more than the plate itself, and trusted that he should preserve his friends as long as he should preserve their testimonial. He could not relinquish the post of secretary without congratulating the association on its healthy and prosperous condition: there had been no quarrellings, no jealousies, or discontent, to induce one member to retire; but all the meetings had been conducted in harmony and he might add too, with discretion, when he recollected that the last act of the association was to appoint Mr. Pownall to the post of secretary (loud cheers), a gentleman thoroughly qualified for the office, and who had already entered on his task with activity and zeal. No wonder then that a body like this, associating together quite as much for the public good as for its own, should meet with the sanctioning presence of the gentleman on the right of the chair. I am delighted, concluded Mr. Baker, to see him amongst us, and as he has alluded to our being in the same boat, I promise him that if, on the untried waters in which our vessel is to be launched on Wednesday next, he will *steer* steadily, we will *pull* heartily, and so the boat shall go merrily down the stream. (Loud cheers.)

"Mr. Allason and the visitors," "the Magistrates of Middlesex, Kent, and Surrey," and several other toasts followed. We must not omit, however, one toast proposed by Mr. Pownall, who prefaced it by saying that the company had drunk the healths of new members and new friends, and right glad was he to see them, but that they ought not to forget a certain good old friend who was about to part with them for ever. Many a time had this good friend, now seventy years old, done them able service; many were the debts of gratitude due for these services; indeed those who had known him longest loved him best, and no one therefore would refuse to drink to

"*The Blessed Memory of the old Act.*"

ST. PAUL'S CHURCH, HERNE HILL.

St. Paul's Church, Camberwell, was consecrated on the 21st of last month. The building consists of a nave and side aisles, or chancel, and a tower and spire at the west end, placed in the centre. The nave has a clerestory, and is covered with a double roof, so arranged as to give the appearance of an open roof of lower pitch. The roof of the aisles is very simple and effective; it consists of boarding supported on a frame-work of timber which forms square panels for the ceiling, and is covered with asphalted felt and slated. The pulpit is on the north side of the chancel-arch, and is entered by means of steps from the chancel; the robing-room is contiguous. The pulpit is of stone, and is adorned with paintings of St. Peter, St. Paul, and other apostles, on porcelain tablets, drawn by Nixon, executed by the firm of Copeland and Garrett, and presented by the latter gentleman, together with the encaustic tiles with which the centre of the nave and the whole of the chancel are paved. The steps, formed also of porcelain confined by iron nosings, are ingeniously designed and arranged. One difficulty in the manufacture of encaustic tiles seems to be, that of making them all exactly of the same size, and so obtaining straight lines when they are laid. A little more attention in this respect will doubtless overcome it. The material seems excellent.

The organ is placed in a small chamber formed over the north porch, so that the front is flush with the wails of the aisle. All the windows are filled with stained glass by Messrs. Ward and Nixon, and deserve commendation. The large east window contains figures of Matthew, Mark, Luke, and John, with the lamb, dove, and other emblems. Unsightly galleries, so often destructive to the effect of new churches, have been avoided, in consequence of which, although this edifice is in reality low, it has an open and airy appearance.

The church is noticeable for the extent of its coloured decorations, ably executed by Mr. Warrington. The roof of nave, aisles, and chancel, is elaborately painted in patterns, the whole of the wood-work having been first stained to represent oak. On both sides of the tie-beams of the nave-roof are Scripture sentences; those facing west, confirmations of the ten commandments, from the New Testament; those east, proverbs from Solomon. On the spandrils of the arches separating the nave and aisles, is represented the vine, with scrolls bearing sentences of thanksgiving, and surrounding an emblem of the sufferings of the Saviour, the crown of thorns, the nails, &c. Originally the scrolls were supported by angels, and over the chancel-arch were painted figures of St. Peter and others, the size of life; but these, at the suggestion of the bishop, were obliterated:—a proceeding with which, considering the present unfortunate state of the church, we entirely agree. In an artistical point of view we may be anxious to see decorations of this description introduced in our churches,—considered abstractedly no reasonable objection can be made to them; but when they are understood to be a banner of a party in the church bent on introducing dangerous changes, our artistical feelings give way to higher considerations, and we express our approval of the caution which would delay their introduction. On the subject of mural decorations and stained glass we shall shortly offer some general remarks.

The architect of the church, Mr. George Alexander, F.S.A., of the firm Messrs. Stevens and Alexander, has displayed most praiseworthy care, and much ability, in rendering the whole consistent and homogeneous, and has succeeded in producing a very successful building. The

style adopted is that of the 15th century. If we were disposed to find fault, we might say that the mouldings of the principal arches in the nave are too large, and produce a heavy effect; they should have been cut up into smaller parts. Where so much, however, has been done with comparatively small means, we are not willing to qualify our praise.

The body of the church is 80 feet in length, 51 feet wide, and 30 feet high, and affords seats (low pewing of oak) for 700 persons. The chancel is 19 feet deep; the tower and spire 120 feet high. The amount of the estimate, including the stained-glass windows in the clerestory and chancel, was 4,500*l.* Some extra works and alterations amounted to 100*l.* The painted decorations cost 205*l.*; but this was defrayed by the drawback obtained on timber, glass, and other materials not liable to duty when used in the construction of a church. The boundary wall and gates cost 450*l.*; the organ, 270*l.*, and the hot-water apparatus (by May) 153*l.*; so that the whole expense, exclusive of the stained-glass windows in the aisles (which were all presented, and cost about 15*l.* each), the encaustic tiles, the porcelain decorations, and architect's commission, was 5,473*l.* The Church Commissioners contributed 700*l.*, and the remainder of the sum was obtained by subscription. The exterior of the building is of Sneaton stone (Yorkshire), hammer worked, with free-stone from Box for the dressings.

Messrs. Howard and Son, of Newington, were the builders; and it is but justice to them to say, that the works are well executed.

CHURCH ARCHITECTURE IN PARIS.

The church of St. Vincent de Paul, in the Place Lafayette, which has been many years in progress, from the designs of M. Pere and M. Hittorff, is now completed, with the exception of some external and internal paintings, and has obtained considerable praise as well for all the artists who have been employed upon it, as for the architects themselves. It was commenced in 1824; but for several years the works were suspended altogether. The building is very advantageously placed, being on a considerable elevation above the surrounding ground, and is approached by extensive flights of steps (with semi-circular terraces branching off on either side with a gradual descent for the approach of carriages), which produce a striking effect. An Ionic portico of six columns, three intercolumniations in depth, and the two towers 181 feet high, are the principal features of the entrance front.

The width of the building is 123 feet 6 inches; the depth, 298 feet 6 inches; the height of the nave is 96 feet. The interior is divided by four ranges of columns into five parts, the centre being the nave, the adjacent division on each side the aisles, and the outside divisions the chapels. The nave and aisles are two stories in height, the latter having a gallery over them. The nave is covered with an open timber roof, as was generally used for the Roman basilica: the building is terminated at the east end by a semicircular absis, embracing the whole width of the nave and aisles. Painting and sculpture, stained glass, cast iron, and all the contemporary arts, have been employed with the view of rendering the whole perfect. Erected at the expense of the city of Paris, money seems hardly to have been considered: it has cost no less than 156,000*l.*, exclusive of the steps and terraces, which cost 9,600*l.*!

A French writer, speaking of this church, says, "that although it fully recals the beautiful types of antique architecture and the primitive ages of Christianity, it is in no degree an imitation, except in the application of the principles which presided at the conception of the noble monuments of Greece and Rome." "We find in it (the writer continues) no direct plagiarism; none of those counterfeits of ancient fragments, the introduction of which, under other circumstances, will be always opposed to those principles which regulate that, in architecture, the true and the fitting can alone produce the beautiful."

Iron Trade.—An advance of 10s. per ton has taken place in the price of Welch iron, while the price of Staffordshire iron has advanced 1*l.* The trade appears to be more steady than it has been for months, and it is said that a general advance of wages is not unlikely to take place shortly.—*Welchman.*

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

The Institute will hold their next meeting (January 13th) in new apartments, although in the same building. The first floor of the house in Grosvenor-street has been fitted up to receive them, and arrangements have been made to give additional *éclat* to the proceedings. It is to be hoped that the members will come forward with the result of their experience and reading, to assist the council in carrying out the purposes of the society. We should like to see such men as Mr. Cockerell, Mr. Barry, Mr. Hardwick, Sir Robert Smirke, and others, communicating to their brother members new points of practice, or their observations on ancient building, instead, of as now, attending simply when vice-presidents for the year, if not totally absenting themselves. To say that they have no time to spare is but a poor excuse. They ought to consider it a bounden duty to maintain the character of the profession to which they belong, and to play their part in forming the minds of those who are to succeed them. We propose in chronicling the proceedings of the institute, not to confine ourselves to the papers which are read, but to notice such remarks as may be thrown out afterwards in discussion, so that our pages may become a more perfect record of the proceedings than exists at present.

The officers for the present year are—Earl de Grey, president; Messrs. H. E. Kendall, J. B. Papworth, and George Smith, vice-presidents; Messrs. Booth, Foxhall, George Godwin, Grellier, Noble, Parker, W. F. Pocock, Roberts, and James Thompson, ordinary members of council; Messrs. A. Poynter and G. Baily, honorary secretaries; and Mr. T. L. Donaldson, foreign secretary.

RESTORATION OF GLASGOW CATHEDRAL.

This fine old building is about to be thoroughly renovated. Workmen are busily engaged at present in removing the iron cages from the outside walls, and in lowering the soil, so as to shew the proper elevation of the church. When completed this will make the venerable pile look quite another thing outside. Inside the work of renovation and improvement is also going forward with spirit. The many and elaborately wrought pillars of the crypt, or old barony church, are being neatly mended wherever it is necessary, and the blackness settled down upon them in the course of years is being washed off by a solution for the purpose. The effigy of St. Mungo, which had been very unceremoniously removed and laid on an adjacent window-sill, has once more been deposited in its proper place, on the raised shrine in the centre of the crypt, where there is very little doubt it originally stood over the grave of the saint. The elaborate groinings and carvings of this portion of the building, most of which have been gilt and painted with various devices, is a theme of universal admiration since it was opened up to the public, and glass windows introduced instead of the blind ones. In this compartment of the building, and over a niche in the lower chapter-house, there is an inscription in Latin, which we translate thus:—"The House of Faith, the Chapel of the Lord." The arms of the founder, Bishop Lauder, are placed over the niche. Lauder died in 1425. In the different portions of the bosses of the roof of the lower chapter-house, which was built by Bishop Cameron, we have his own arms, and the arms of Archibald Earl of Douglas, who endowed the cathedral with the church of Cambushlang. Next these are the Royal arms of Scotland, and the arms of Scotland and England on one shield. Above the original south door, entering to the nave, the groined arches are decorated with crowns, which we must say we never observed before, and would not have done so now, had they not been pointed out by our friend, Mr. Andrew Adie, than whom no man in all Glasgow has a more minute knowledge of every hole and bore about the cathedral. These crowns are beautifully carved, and amount in number to eight, with inscriptions and mottoes, in the old English characters, which, we have no doubt, could be deciphered were a person near enough to trace the letters. On the arch next the ascent to the choir, on the south side, and to the right of the entrance door to Principal Macfarlan's church, the decorations of the roof point it out as a chapel of consequence. Besides a great many devices and inscriptions, there is the figure of a man kneeling before a blazing altar, with the word "Maria," thereby indicating that this was the chapel of the Virgin. We have no doubt a splendid tomb stood here, and that were the pavement removed, and a search made, its foundation and other relics would be found. When the pavement was laying a short while ago, the workmen felt quite certain that there was something strange below, as it sounded quite "boss," or empty. The arch on the south aisle, next the high altar, is most elaborately decorated and carved. Amongst the carvings to be mentioned is an emblem of the Holy Trinity, and the five wounds of our Saviour, a crown of thorns, a cross, a scourge, &c. At the south door of the lady's chapel the tombstone of Archbishop Boyd attracts attention. It bears the date 1581, and lay originally on the steps of the high altar, just below where the pulpit of the very rev. principal now stands. When removed in 1800, the skeleton of the archbishop was found in a very entire state, and wrapped in a silk, besides a worsted damask dress. On the summit of the roof of the chapter-house, we observed, for the first time, a small stone slab, bearing the initials of Archbishop Law, and the pastoral staff. It was this archbishop who restored the lead roof of the cathedral, after its destruction at the Reformation, and his monument may still be seen in tolerable preservation in the lady's chapel. He died in 1632. *Blackadder's Aisle.*—The workmanship here, and especially the groinings of the roof, are most elaborate and beautiful, The following is the style of the inscriptions over the tombs of those who are buried in the aisle, and it must be confessed the information furnished is not very great:—

Mr
J • D
1658
Mr
A N
1628
&c. &c.

Mr. Kirkman Finlay, of Castle Toward, seems to have been the last interment in this sacred spot.

The remains of the identical *Strap*, who makes such an interesting figure in Smollett's "Roderick Random," lie under a slate-coloured grave-stone in the yard, not far from the entrance to the church of the principal.

The whole of these works are being carried on at the expense, and under the superintendence of Government. A gentleman, sent down by the Woods and Forests, lately arrived in Glasgow, to make the preliminary arrangements, and to overlook a portion of the restoration.—*Glasgow Constitutional.*

METHOD OF DETERMINING WHETHER A STONE WILL RESIST THE ACTION OF FROST.

A few years since M. Brard communicated to the Royal Academy of Science, in Paris, a method of determining, by a few prompt and easy experiments, whether a stone to be used for building purposes is capable of resisting the destructive action of moisture and frost. The Academy appointed a committee to inquire into the merits of M. Brard's process, and to make a report thereon. We are indebted for the following extracts from this report to to a work recently published by Parker, and entitled *The Useful Arts Employed in the Construction of Dwelling-houses*:—

In the choice of a stone for building purposes, it is of the utmost importance to be able to determine, by a few prompt and easy experiments, whether the proposed stone is capable of resisting the destructive action of moisture and frost. The means of ascertaining this were difficult and uncertain, until M. Brard, several years ago, communicated his method to the Royal Academy of Sciences at Paris. This learned body having appointed a committee of their own members to inquire into the merits of M. Brard's process, and to make a report thereon, the united testimony of engineers, architects, masons, and builders from different parts of France was received, and proved so favourable as to its merits and simplicity, that the committee recommended

the plan to public notice and general adoption. From their report we select a few details which, hitherto, we believe, have not appeared in English.

When water is converted into ice an increase in bulk suddenly takes place with such amazing force that it appears to be almost irresistible. This is the force which cracks our water-bottles and ewers; splits asunder the trees of our forests; and destroys some of the stones of our buildings. But the action of frost upon stone is very gradual; it is confined to the surface, and when we see a layer of stone separated from the rock or the building, we see the result of the action of the frost during several successive winters, whereby the fragment is gradually thrust out of its perpendicular position, and at length falls. This natural process is repeated in our buildings: we rarely see squared stones split into large fragments by the action of frost except there be a cavity of some considerable size, in which a quantity of water can be collected. The usual action of the frost is at the surface, which is destroyed by the chipping off small fragments in consequence of the adhesion of the materials of the stone being partially destroyed.

All stones absorb water in greater or less quantities, and there is no rock that does not contain some humidity. The great difference between stones which is now to be considered is in their power of resisting frost. Stones of the same kind, nay, stones from different parts of the same quarry, are acted upon very differently by frost; for, while one stone soon begins to shew the destructive effects of its action, another remains uninjured during many centuries. It will, therefore, be convenient to call those stones, of whatever kind, which withstand the action of frost, *resistant*, and those which yield to its action, *non-resistant*.

M. Brard's first idea, in order to test these resistant properties in building-stones, was, to saturate the stone with water, and then expose it to cold artificially produced; but this was found to be impracticable on a large scale, and the freezing mixtures and other means of producing cold were liable to act chemically upon the stone, and thus produce other effects than those of cold.

M. Brard was then led to compare water with those numerous solutions of the chemist, which, under certain modes of treatment, crystallize. The expansive force of salts in crystallizing is very great, and he saw no reason why water should not be regarded as a crystalline salt similar in its nature to those saline bodies which effloresce at the surfaces of stones, and in time destroy them and even reduce them to powder.

He therefore tried, in a very large number of experiments, the action upon building-stones of solutions of nitre, of common salt, of Epsom salts, of carbonate and sulphate of soda, of alum and of sulphate of iron, and found that the stones cracked and chipped, and in many cases behaved precisely in the same way as when under the influence of freezing water. In the course of these trials, sulphate of soda (Glauber's salts) was found to be the most energetic and active, and to be the best exponent of the action of freezing water.

In order, therefore, to determine promptly if a stone be resistant or non-resistant, the following process was adopted. A saturated solution of sulphate of soda was made in cold water; the solution being put into a convenient vessel, the stone was immersed, and the solution boiled during half an hour: the stone was then taken out, and placed in a plate containing a little of the solution. It was then left in a cool apartment, in order to faciliate the efflorescence of the salt with which the stone was now impregnated. At the end of about twenty-four hours the stone was covered with a snowy efflorescence, and the liquid had disappeared either by evaporation or by absorption. The stone was then sprinkled gently with cold water until all the saline particles diappeared from the surface. After this first washing the surfaces of the stone were covered with detached grains, scales, and angular fragments, and the stone being one that was easily attacked by frost, the splitting of the surfaces was very marked. But the experiment was not yet terminated: the efflorescence was allowed to form, and the washing was repeated many times during five or six days, at the end of which time the bad qualities of the stone became fully established. The stone was finally washed in pure water; all the detached parts were collected, and by these the ultimate action of the frost upon the stone was estimated.

The behaviour of various non-resistant stones under this process was remarkable. Some were found to have deteriorated in the course of the third day; others to have entirely fallen to pieces; those of which the power of resistance was somewhat greater, held out till the fifth or sixth day; but few stones, except the hard granites, compact limestones, and white marbles, were able to stand the trial during thirty consecutive days. For all useful purposes, however, eight days suffice to test the resistant qualities of any building-stone.

The explanation of this process is very easy. The boiling solution dilates the stone and penetrates it to a certain depth, nearly in the same way that rain-water by long-continued action introduces itself into stones exposed to the severity of our changeable climate. Pure water when frozen occupies a greater bulk than when fluid, and the pores or cellules of the stone not being able to accommodate themselves to the increased bulk of the water, great pressure is exerted between and among them, whereby a portion of the water is driven to the surface, and in doing so rends and detaches small portions of the stone. The same action takes place with the saline solution; it is introduced into the stone in a fluid state, from which passing into the solid it occupies a greater bulk, and a portion of it appears at the surface. The repeated washings have no other object than to allow the salt to exert its greatest amount of destructive action upon the stone. There is a striking analogy between the effect of congealed water and that of the efflorescence of salts, in the disintegration of non-resistant stones; namely, that pure water acts on the stones destructively only in a state of snowy efflorescence, which evidently proceeds from the interior to the exterior like the saline efflorescence; whilst water at the surface of the stones may freeze into hard ice without injuring them, just in the same way as the salts, which may crystallize upon stones without exerting any injurious action.

The experience of several engineers, extending as it does over several years, fully proves, of a large variety of stones whose qualities were well known, that the action of M. Brard's process and that of the long-continued frost exactly coincide.

It is not the least interesting part of the inquiry to know that this process may be applied with perfect success to ascertain the solidity and resistant power of bricks, tiles, slates, and even mortar. From a mass of minute detail, we will select a few general results.

During one winter season M. Vicat composed seventy-five varieties of mortar, the difference between any two consisting in the proportion of sand and the method of slaking the lime. In the following June these mortars were exposed to the disintegrating process. Most of them were attacked in twenty-four hours; almost all of them in forty-eight hours; and all except two in three days. This gentleman also found that a mortar made ten years previously, of one hundred parts lime which had been left exposed to the air, under cover, during the whole year, and then mixed up into a paste with fifty parts of common sand, withstood the trial admirably during seventeen days, while the best stones of the neighbourhood speedily gave way. In this case the solution was saturated while hot, which is so powerful in its effects that stones which have resisted the action of the frost for ages, soon give way when exposed to it.

M. Vicat calculates that the effect of the sulphate of soda upon a non-resistant stone after the second day of trial equals a force somewhat greater than that exerted by a temperature of about 21 degrees Fahrenheit, on a stone saturated with water.

The action of the process upon bricks proved that, whatever their qualities in other respects, if imperfectly burnt, they are speedily acted on. The sharp edges of the brick, and then the angles, are first rounded, and finally the brick is reduced to powder. Such is precisely the action of frost often repeated. Well-baked bricks, on the contrary, retain their colour, form, and solidity by this process, as well as under the influence of frost. Ancient Roman bricks, tiles, and mortar, and hard well-baked pottery resisted the process perfectly; as did also white statuary marble of the finest quality, while common white marble was soon attacked. In Paris, portions of buildings which had been exposed to the air during twenty years without undergoing the least alteration, were submitted to this ordeal, and the experiment agreed with observation. In one extensive series of experiments on stones from different quarries of France, the action of the salt was continued for seven days, and the results noted down; it was then continued for fourteen days, and the results compared with the preceding ones, which only served to confirm the judgment first given, for those stones which were noted as of bad quality crumbled to dust or split into fragments, while those noted for their good qualities had experienced no sensible alteration.

One of the great advantages of this process is the power it gives to the architect of choosing a hard, durable stone for those parts of the building most exposed to the action of the weather, when the funds are insufficient to admit of the whole building being so constructed. Thus the cornices, the columns, and their capitals, are struck in all directions by rain, and hail, and damp air, and are consequently far more exposed to their destructive action than the flat surface of a wall, which offers but one plane to the air.

In the course of this inquiry a very curious case arose. During the erection of a church in Paris, the architect required a good durable stone for the Corinthian capitals; and many circumstances disposed him to select it from the neighbouring quarry of the Abbaye du Val. But, on seeking the opinion of two brother architects, he was surprised to find their estimations of the stone to be totally at variance, for while one declared that he had employed it with the greatest success, another said that he had seen it yield speedily to the effects of frost. On visiting the quarry it was found that two beds of stone were being worked, an upper and a lower bed; specimens of the stone were taken from each, and on submitting them to a hot saturated solution, it was ascertained almost immediately that the upper layer furnished excellent stone, while the lower one supplied that of which the architect had so much reason to complain. But it is remarkable that the stones from the two beds had precisely the same appearance in grain, colour, and texture; so much so, that when brought into the mason's yard it was impossible by ordinary tests to distinguish the good from the bad stone.

At the conclusion of the inquiry of the committee, the Royal Academy of Sciences proved the high estimation in which they held this contribution of science to the useful arts, by directing to be published the following practical directions for repeating the process, for the use of architects, builders, master-masons, land proprietors, and all persons engaged in building.

1. The specimens of stone are to be chosen from those parts of the quarry, where from certain observed differences in the colour, grain, and general appearance of the stone, its quality is doubtful.

2. The specimens are to be formed into two-inch cubes, carefully cut, so that the edges may be sharp.

3. Each stone is to be marked or numbered with Indian ink or scratched with a steel point; and, corresponding with such mark or number, a written account is to be kept as to the situation of the quarry, the exact spot whence the stone was detached, and other notes and information relating to the specimen.

4. Continue to add a quantity of sulphate of soda to rain or distilled water, until it will dissolve no more. You may be quite sure that the solution is saturated, if, after repeatedly stirring it, a little of the salt remains undissolved at the bottom of the vessel an hour or two after it has been put in.

5. This solution may be heated in almost any kind of vessel usually put on the fire, but perhaps an earthen pipkin may be most convenient. When the solution boils, put in the specimens of stone, one by one, so that all may be completely sunk in it.

6. Continue the boiling for thirty minutes. Be careful in observing this direction.

7. Take out the cubes one at a time, and hang them up by threads in such a way that they may touch nothing. Place under each specimen a vessel containing a portion of the liquid in which the stones were boiled, having first strained it to remove all dirt, dust, &c.

8. If the weather be not very damp or cold the surfaces of each stone will, in the course of twenty-four hours, become covered with little white saline needles. Plunge each stone into the vessel below it, so as to wash off these little crystals, and repeat this two or three times a day.

9. If the stone be one that will resist the action of frost, the crystals will abstract nothing from the stone, and there will be found at the bottom of the vessel neither grains, nor scales, nor fragments of stone. Be careful in dipping the stone, not to displace the vessel.

If, on the contrary, the stone is one that will not resist the action of frost, this will be discovered as soon as the salt appears on the surface, for the salt will chip off little particles of the stone, which will be found in the vessel beneath; the cube will soon lose its sharp edges and angles; and by about the fifth day from the first appearance of the salt, the experiment may be considered at an end.

As soon as the salt begins to appear at the surface its deposit is assisted by dipping the stone five or six times a day into the solution.

10. In order to compare the resisting powers of two stones which are acted upon by the frost in different degrees, all that is necessary is, to collect all the fragments detached from the six faces of the cube, dry them and weigh them, and the greatest weight will indicate the stone of least resistance to the frost. Thus, if a cube of twenty-four inches of surface loses 180 grains, and a similar cube only 90 grains, the latter is evidently better adapted than the former to the purposes of building.

LAW OF DILAPIDATIONS.

There are few points of architectural jurisprudence which interest so large a number of persons as does the question of dilapidations. Whether to landlord or tenant, surveyor or operative, the matter is one of importance, and several attempts have consequently been made to reduce the laws which relate to it to some sort of certainty. Being in many cases a question of degree, law cannot always be made to apply; and custom, and the experience of the surveyor, must be appealed to. "Still," as Mr. Gibbons remarks in his "Treatise on the Law of Dilapidations," "it is important that the surveyor should have some knowledge of the principles of law, in order that he may know the points to which he has to apply himself in framing his survey and estimate, and may not labour in vain. The great discrepancy in the evidence of different surveyors, and the little esteem in which their testimony is consequently held, arises in a measure from inattention to legal principles; and if, in making their surveys, they were to govern themselves by the settled rules of law, and not proceed upon their own vague notions of right, they would be more useful to the administration of justice, and their opinions more respected."

The attention of the council of the Institute of Architects having been directed to this subject, as one on which the opinion of the institute might be expressed with advantage; a committee, consisting of Messrs. George Smith (Mercers' Hall), John Newman, John Bull Gardiner, W. F. Pocock, and W. Rogers, was appointed to investigate and report on the practice in valuing dilapidations, and on the state of the law by which such valuations are effected. The Report of this committee is now published,* and forms an exceedingly useful document. We do not hesitate to recommend it to our readers. In the preface to the Report, the council remark that it appears "to be an inherent defect in the general mode of preparing leases, that they are drawn from antiquated precedents, without an attempt at the modifications necessary to meet modern improvements, or to provide for special cases or contingencies. A tenant bound to repair, uphold, support, and maintain a new house, is obviously in a very different position from one upon whom the same condition is imposed with respect to an old and nearly worn-out, though tenantable fabric, and yet the distinction is unheeded in the repairing covenants of any form of lease commonly adopted."

To obviate this difficulty they propose that previous to the execution of a lease the premises should in all cases be surveyed, and that a schedule should be drawn up, signed by the lessor and lessee, specifying the actual state of every part of the buildings, by reference to which the dilapidations should be assessed at the end of the term.

As to the definition of the term dilapidations, the report says, "dilapidations are, in usual practice, considered to be those defects only which have arisen from neglect or misuse; and not to extend to such as only indicate age, so long as the efficiency of the part still remains. But if the effects of use or age have proceeded so far as to destroy the part, or its efficiency in the structure, this argues neglect or misuse; it being the presumption that at the commencement of his term, the tenant was satisfied that every part was sufficiently strong to last to its close."

In cases of yearly tenancy, the usual practice, says the Report, is to require the tenant to make good all works damaged, or any waste committed during his tenancy; but not to make good injuries arising from fire, use, or wear, or lapse of time; "in fact, he is only bound to such repairs as are necessary to keep a house or building wind and water-tight." This latter statement is not correct, or all events is ill-expressed, and does not agree with that which precedes it. If paper-hangings be torn by a tenant, a hearth broken, the nosing of a step *knocked* off (not worn), or any other waste committed, he must make good the damaged work. Even if external wood-work decay for want of painting sooner than it otherwise would do, the tenant is bound to restore it.

As regards ecclesiastical dilapidations, the Report states, the usual practice "is to consider that (independently of the obligation to compensate for actual deficiencies) the representatives of a late incumbent are liable for the value of repairs equivalent to, or consonant with, the extent of those which, in civil cases, a lessee would be called upon to perform on taking a lease for twenty-one years, under an agreement to put the premises into complete and substantial repair at the commencement of such a term."

But it points attention to a case wherein it was ruled that the incumbent was not bound to supply or maintain any thing in the nature of ornament.

The Report afterwards says, "An incumbent is in many instances bound to keep the chancel of the church in repair; and the liabilities to repair it may be considered as amounting to those above stated with respect to the other premises held by him."

The law is more stringent than is here stated. Excepting through special custom, the incumbent is bound in all cases to repair the chancel and maintain it in a proper state for divine service. By the 35th of Edward I., statute 2, the incumbent is permitted to fell timber growing in the church-yard for this purpose, and may, if he please, do so for the relief of the parishioners when the body of the church needs repair.

* Weale. London, 1844.

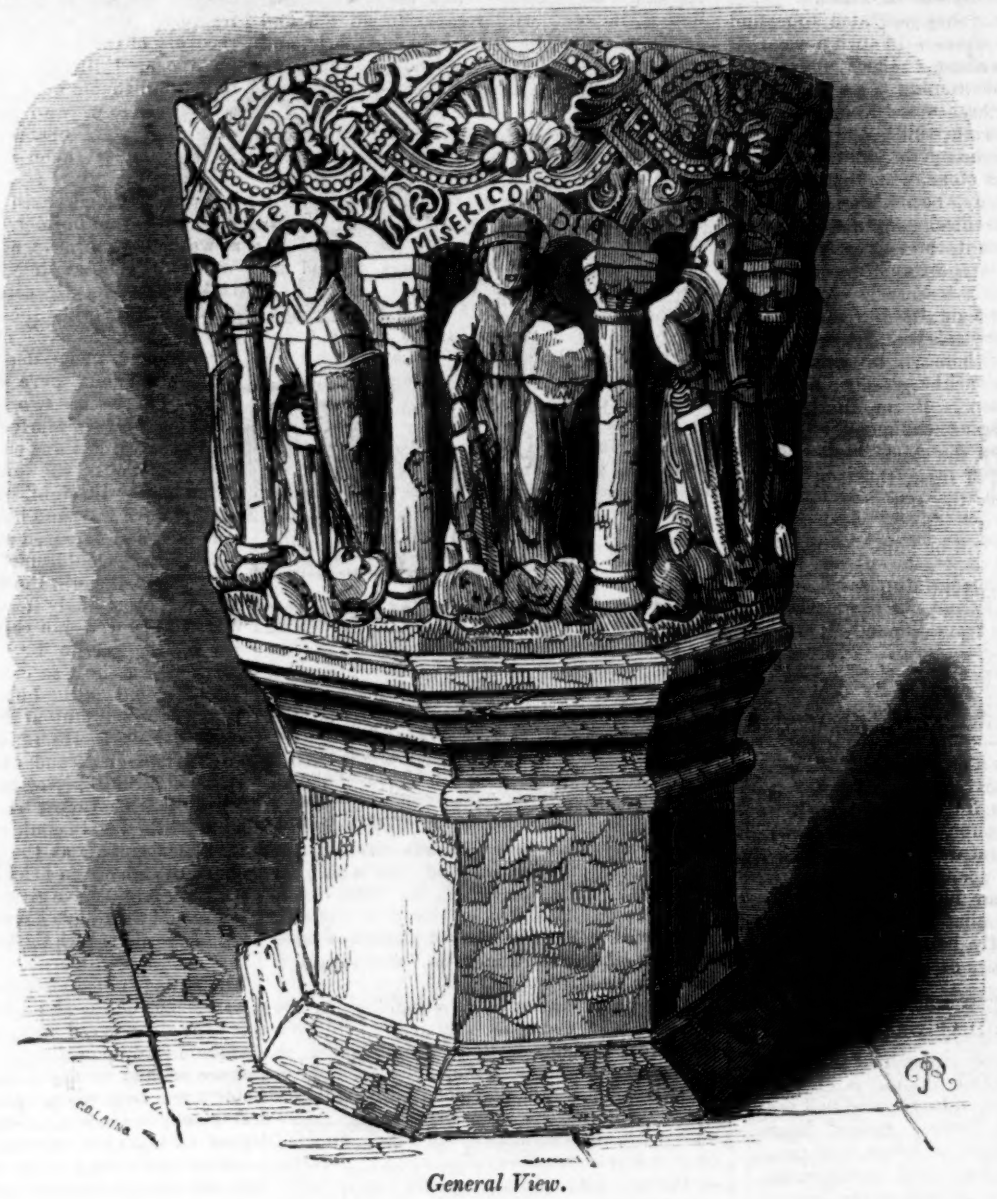
FALL OF A SCAFFOLD THROUGH OVER-LOADING IT.

On Monday last a melancholy event occurred at the corner of Jermyn-street and Duke-street, St. James's, involving the loss of one human life, if not more. During the last few weeks, the house at which the occurrence took place had been pulled down, and was nearly rebuilt. At the time of the accident the workmen were employed in raising a large cornice-stone, weighing between six and seven hundred-weight, and on its arriving near the top of the building, the stone was over-balanced, and fell with the scaffolding, striking a workman named Francis, a mason's labourer, and two other workmen, John Perry, a mason, and William Smith, a labourer. The poor fellow Francis was killed on the spot, and fell into a well which was in the area, the depth of several feet, whilst Smith and Perry were so frightfully injured, that they were conveyed to St. George's Hospital in an almost dying condition; Smith, in particular, had his skull fractured in a shocking manner. On the recovery of the body of Francis from the well, he appeared literally crushed to an almost indistinguishable mass, and those who saw the sad spectacle were so paralysed, that for some time they were unable to render assistance. At the inquest upon Francis, the following evidence was given:—James Sanderland said he was a labourer in the employ of Mr. Archbutt, the builder, of Chelsea, and was at work that morning at the house rebuilding for Mr. Slater, at the corner of Jermyn and Duke streets. Deceased was in the same employ, and worked there also. Shortly after nine o'clock he was on the scaffold when it gave way. The deceased, with the other two injured men, were on the scaffold at the time. There were two stones on the scaffold, weighing between fourteen and fifteen hundred-weight. Witness was enguged with the others in lifting one of the stones, weighing six and seven hundred-weight, when some part of the scaffold gave way, and both pieces of stone fell suddenly, and deceased and the other two men with them. Could not account for the accident, and thought the scaffold perfectly safe before. Most likely it was the putlocks gave way. They were not very strong, at least they did not appear to be. Mr. Edward Foster deposed that he was clerk of the works for Mr. Archbutt, at the house, 47, Jermyn-street. Was in the building at the time, and heard the scaffold break. He ran from the place where he was standing, and saw the poor fellows, Perry and Smith, lying in an excavation made for vaults. They must have fallen at least from 60 to 80 feet. He could not assign any reason for the accident, as the scaffold was a good one, although only a bricklayer's scaffold. The putlocks might have given way, but he thought that could only have been caused by the working of the stone with the mallet on the scaffold; that would considerably increase the weight. The strength of the scaffold was not increased on account of the stone being raised upon it. It was considered safe, as on Saturday the scaffold had upon it three times the weight of stone it had to-day. The jury, after considerable discussion, returned a verdict of Accidental Death. They, however, added their strong opinion that the scaffolding had been used for the purpose of suppoting a much greater weight than was proper.

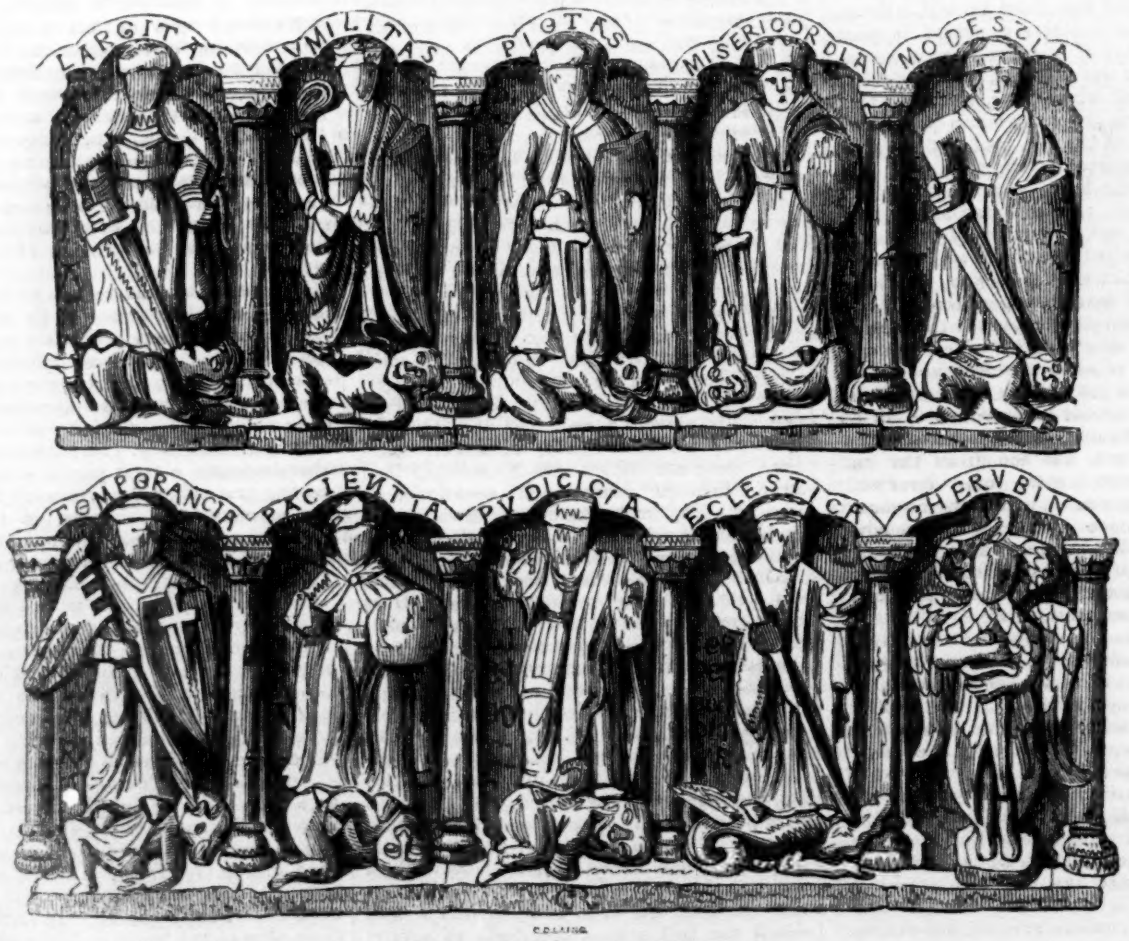
New Method of Silvering Glass.—At a meeting of the Chemical Society, Mr. Warrington described a new method of covering glass, by precipitation, with a coating of metallic silver, the invention of Mr. Drayton. It consists of partially precipitating, and thus neutralising (to use the inventor's own words), a solution of nitrate of silver, by spirit of hartshorn, and adding to the clear solution, after subsidence, oil of cassia, previously dissolved in spirits of wine. This compound mixture forms the silvering menstruum, and is to be poured on the surface of the glass, or into the vessel intended to be silvered, the surfaces having been previously rendered perfectly clean. Oil of cloves, dissolved in spirits of wine, is then to be gradually dropped over the surface of the silvering solution, or the two solutions may be rapidly mixed and then applied immediately. In the course of about fifteen minutes a faint purple cloud appears, and this gradually spreads through the whole of the solution, and deepens in tint until it becomes opaque, when the operation is complete, and a most beautiful mirror is obtained. As thus produced, the reflecting surface is darker in its aspect and more similar to the brilliancy of a very highly polished speculum. The risk of breakage attendant on the usual process, by means of tinfoil and mercury, is also avoided, particularly where very large looking-glasses are being constructed; and the great advantage obtained of being enabled to silver uneven surfaces, as of lenses or cut glass.

Bishop Ken's Tomb.—A subscription has been opened for the purpose of renovating the tomb of Bishop Ken in the churchyard at Frome, and, as a tribute to the memory of the good bishop, restoring, in strict accordance with ecclesiastical propriety, the adjoining chancel of Frome church. In furtherance of these objects, the family of Longleat have subscribed 250*l.*, the Bishop of Salisbury, 10*l.*, and there follows a long list of contributors.

NORMAN FONT, AT STANTON FITZWARREN CHURCH, WILTS.



General View.



Elevation of Figures round the Font.

NEWSPAPER BUILDER

ANCIENT NORMAN FONT AT STANTON FITZWARREN CHURCH, WILTS.

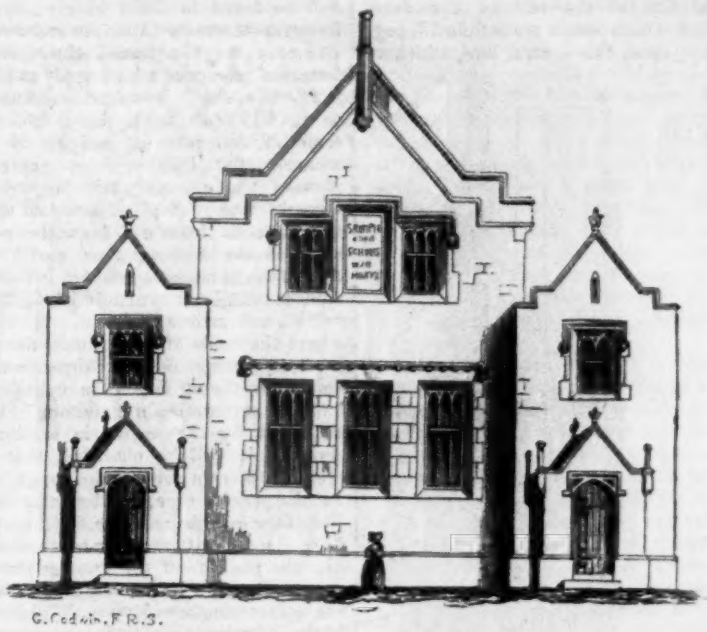
The small church of Stanton Fitzwarren, in which the fine font represented on the other side, is to be found, is situated about three miles from Swindon, in Wiltshire. The font has, only within the last three years, been relieved from a load of whitewash, which had so completely filled up the carving, that it looked like a rough stone. This cleaning out was superintended by the Rev. J. Trenchard, the rector, and he certainly has been rewarded for his trouble, as a more interesting font can scarcely be found. The date is probably that of the late Norman. The illustrations scarcely require any description, except to state that it is termed an emblematical and inscribed font, representing the Triumph of the Virtues, with the aid of the Church, over a variety of curious hobgoblins termed Vices. On one side of the font, opposite to the figure emblematical of the Church, is a kneeling stone, no higher than the slanting moulding at the base. The sketch was taken with the camera lucida while a strong light was on the object.

The church is said to have been a very curious structure, but it has now, from being either compoed or refaced, the appearance of a modern building. The interior has a chancel arch, which bears the reputation in the neighbourhood of being Saxon, but it is in reality a fine early Norman specimen. C. J. R.

DESCRIPTION OF A HOUSE IN DAMASCUS.

In order to give me an opportunity of seeing his house, the Effendi politely sent a message to the ladies of his establishment, announcing the presence of a stranger, on which they withdrew to the upper chambers. The Mulatto having duly informed us that all was in readiness, we rose, and passing through another dark passage, found ourselves in the courtyard of the harem. Then, and not till then, did I understand the warmth with which travellers had spoken of the beauty of the Damascene houses: we seemed to have passed from Purgatory to Paradise. The pavement of the immense yard was of polished marble of various colours, beautifully inlaid. A fountain in the centre, thirty feet in length and half that breadth, into which brazen snakes' heads poured a copious supply of water, was overhung by orange, citron, and pomegranate trees; and an immense vaulted recess (*leewan*) at the further end was fitted up with a divan, which, having a northern exposure, is never subject to the rays of the sun. As in Egypt, the ground-floor was of stone, and painted in alternate layers of white, blue, and red: this, with the rich dark green vegetation of parterres divided by slabs of Carrara, produced the most brilliant and captivating effect on me. The space between the basin and the recess was elaborately inlaid, and the marbles of rarer quality than in any other part of the courtyard. The principal apartment, which opened off the lower part of the leewan, was lofty, extensive, and of dazzling magnificence. Every part of the wall was of stone, cut into arabesque ornaments, the most curious object being a miniature recess of white marble, supported by tiny columns with gilt capitals, between which the Saracenic honeycomb luxuriated in all its intricacy. The raised floor was covered with a rich Persian carpet, and the divan that ran round the room was in satin, embroidered with flowers. Large antique China bowls displayed themselves in various shelves; and altogether I felt that the often sought but rarely found splendour of the Arabian Nights' Entertainment was at length realized.—*The Modern Syrians.*

Bonner Hall.—Last Monday week a sale took place, by order of the Commissioners of Woods and Forests, of the ancient residence formerly belonging to Bishop Bonner, called Bonner Hall, which is situated on a part of the site of Victoria-park. The portion remaining, which is stated to have been a part of one of the wings of the original palace, is about 120 feet long and about 20 feet in width, the external walls being the same that were first erected. This building has for several years past been separated into five houses, one of which was a public-house. These have been internally constructed according to the modern style of architecture, and there is very little to denote its former state.



THE BROMPTON PAROCHIAL NATIONAL SCHOOLS.

These Schools, represented above, are situated on the north side of Knightsbridge, and will accommodate 200 girls and 200 boys; rooms for the master and mistress are attached, on either side. The building was erected from the designs of Mr. George Godwin, by Mr. Bonnin, Jun., in little more than four months. The amount of the contract was 1100*l.*, the additional works came to 8*l.*; the forms, boxes, and desks cost 48*l.*

FIRE FROM OVERHEATED FLUES.

Mr. Braidwood, the superintendent of the Fire Brigade, accompanied by a surveyor, made a close examination of the ruins of Mr. Farey's house in Great Guildford-street, recently burnt down, with the view of ascertaining, if possible, the cause of the fire, for the information of Mr. Wakley and the jury; and the former gentleman expressed his decided opinion to be, that it was occasioned by a hot-air flue becoming overheated, and setting fire to a beam in the back parlour. The death of the unfortunate persons he attributes to the falling in of the upper stories, through the insufficiency of the building, the timber, and joists, &c., having been (as he says) too light for so capacious a residence, as was the case in Lord Hillsborough's mansion in Grosvenor-street last year, which fell in before it was burnt to the lower stories. Mr. Braidwood is confirmed in this opinion by several surveyors. Mr. Farey differs from Mr. Braidwood as to the particular flue in which the fire originated. In addressing the jury Mr. Wakley observed, "If this inquiry should have the effect of drawing the attention to flues in general, great benefit may be derived from it, and future accidents be prevented. Too much attention cannot be paid to them, and I am really surprised that intelligent people in this country as we are should allow such fires to be continually occurring without taking measures to prevent them." At the inquest, Colfe, of the Fire Brigade, remarked that "even hot-water pipes would set fire to beams. Such an instance had recently happened at Day and Martin's Warehouse." The coroner said "this was something new in science," but, we are sure, if he had reflected, he would have seen it was nothing new, and was perfectly correct. In an open vessel, water cannot be heated above the boiling point, all the surplus caloric goes off in steam; but in a close boiler the case is very different. It may be made *red-hot*, so to speak, and would ignite wood. Two or three years ago this fact excited considerable attention, in consequence of a fire at Manchester which was attributed to the hot-water apparatus on the premises. Persons having stoves with iron pipe flues, should be certain that the pipe is not in contact with any ignitible material. In the construction of chimneys it is important to see that the end of no beam enters the flue, and that in fixing skirting-grounds, no deal wedges be driven through. To the subject of fires generally, we shall return before long.

ON THE CONSTRUCTION OF HAND-RAILS OF STAIRS.

BY MR. GEORGE RIDLEY.

No. III.

25. From the combined properties of the trihedral and the cylindric solid, as shewn in our former remarks on this subject, we are enabled to make their use subservient to any purpose relative to the formation of the face-mould; and from the properties of the trihedral alone, we can ascertain, to the greatest degree of accuracy, the bevels for the butt-joints in the wreathed portions of the hand-rail. In order, however, to make the use and application of these solids more clear, let us suppose that it were required to lay down the face-moulds, for the formation of the wreathed portion of a hand-rail, where a flight of seven winding steps intervenes between two ranges of flyers. Let the semi-circular well-hole, around which the winding steps radiate, be 3 inches in diameter within the perpendicular planes of the outside surfaces of the rail. Let the rail itself be 3 inches wide and 2¼ inches deep; also let the treads of the flyers be 10 inches wide, and the height of each step 7 inches.

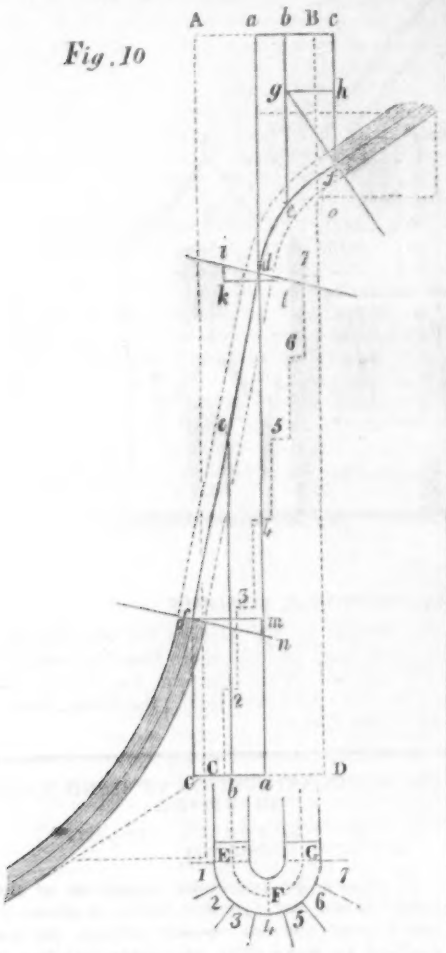
26. The first thing to be done is to lay down a plan of the rail, as shewn by fig. 10, wherein the circular line, E F G, is taken as the mean line for the radius of our cylindric surface (see article No. 11. page 620, vol. ii.); next proceed to lay down a development of this cylindric surface, by obtaining the length of the circular line, E F G, in the manner described in article No. 10, page 619, vol. ii., or, by having ascertained the diameter, E G, which in the present case is 6 inches, we may, from the well-known properties of the circle, obtain the length of one-half the circumference, thus,

$$\frac{11 \times 6}{7} = 9\,\tfrac{3}{7} \text{ inches.}$$

the length of the line, E F G, sufficiently near for practice. Make the line, C D, equal to E F G; let the point *a* in the development correspond with the point F on the plan. At the point C lay down the riser and tread of the last step in the first range of flyers, draw the parallelogram, A B C D. Upon D B set off the entire height of the seven winding steps, and next lay down the tread and riser of the first step in the second range of flyers; also lay down the treads and risers of the winding steps, as they occur immediately beneath the central line of the rail. Draw the inclination of the rail over each of the flyers, as thus laid down; but from the steepness of the steps, at the narrow ends of the winders, it is usual to bring forward the rail, as shewn

in the figure. Draw the line shewing the thickness of the rail, and draw also the central line of the rail on the development (for which cause see article 13, page 620, vol. ii.); upon this central line, which we

Fig. 10



have designated as the line of heights (see article 15, page 620, vol. ii.) case of the abrupt angles, caused by reason of the different inclinations of the rail, in the manner described by article 13, page 620, vol. ii. Next determine the points *e* and *e* of the development of the cylindric surface, through which the cutting plane of the face-moulds are to pass; the mode of ascertaining these points is described by articles 16 and 17, figs. 5 and 6, page 620, vol. ii. Having done this, draw the lines *f e*, *b e*, and *a d*, which represent the heights for our guidance in laying down the face-mould.

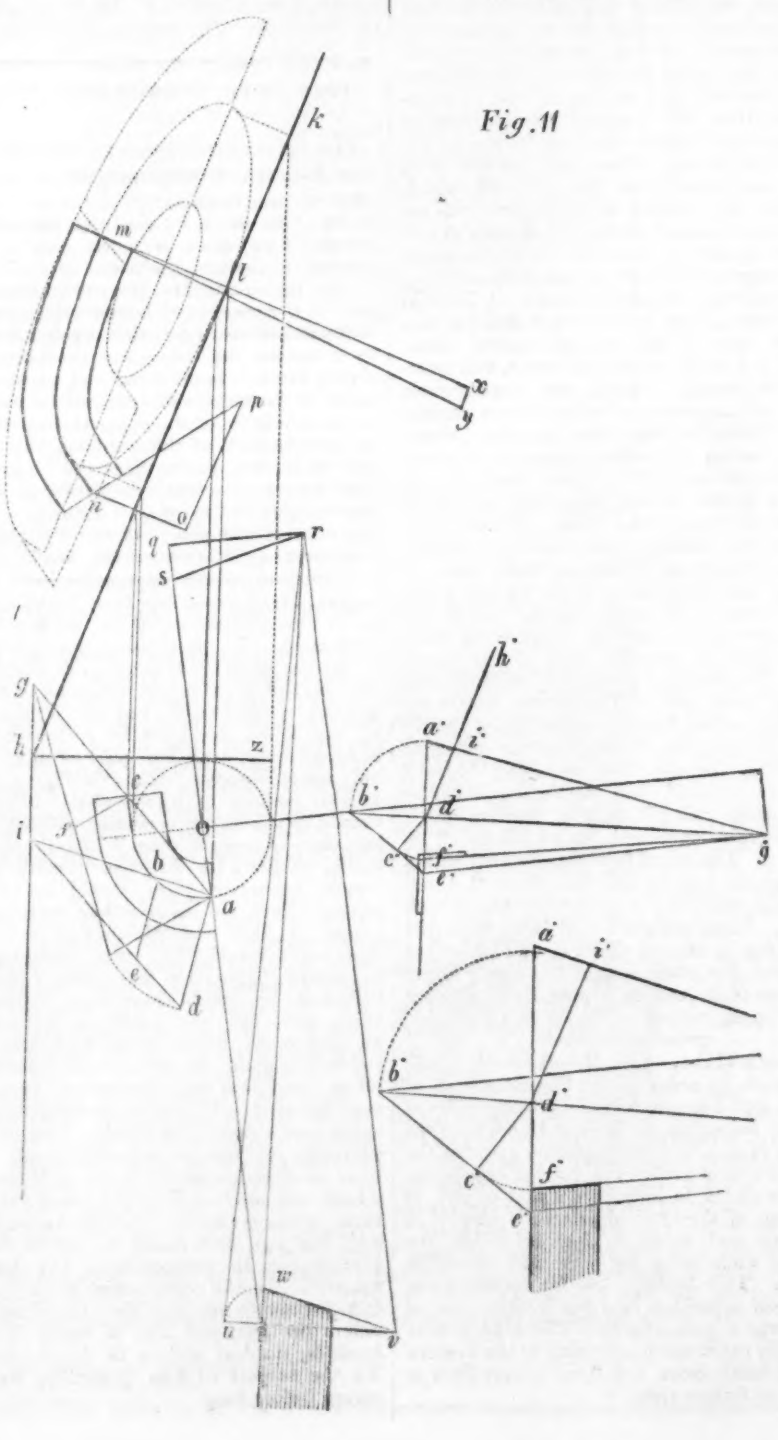
27. In article 16, page 620, vol. ii. we have noticed that the division of the wreathed portions of the rail should not, as far as regards the economy of the material, exceed one-fourth of the revolution around the entire cylinder; it is therefore necessary to mark off, on this developed surface, the position of the butt joints; thus, the lines *f n*, *i l*, and *f g* are made as near as possible at right angles to the inclination of the rail. The line *f n* is fixed at a sufficient distance from the circular surface of the cylinder as to admit of the joint being entirely free from the wreathed part of the rail, and the line *f g* should be similarly arranged for the same purpose; but when convenient, it is best to have this butt joint at the commencement of the straight rail, as shewn by the engraving. From the points *f* and *f* draw the lines *f c* and *f c*, each parallel to B D and A C; but the height or distance *f c*, which regulates the line A B, should always be sufficient, to avoid confusion, in laying down the lines for the face-mould, as will be seen in figs. 11 and 12.

28. Having thus far completed our development of the line of heights, we are next to lay down such portions of the plan of the rail as pertain to each of the divisions of the wreath respectively; for this purpose, let the central line, *a b c* of the plan in figs. 11 and 12, represent the line E F in fig. 10, with the addition of the straight portions of the rail, as shewn in the development by the line B *c* and C *c*. Fig. 11 shews the mode of obtaining the face-mould for that portion of the wreath contiguous to the lower range of flyers, and fig. 12 shews that which is required for the wreath adjoining the upper range of flyers. In both figures, each portion of the plan is similar to the other, but varying in the heights and inclination of the rail; by reason of which, the angles as well as the bearings in each figure will be found to differ widely; in each case, however, the same principle and mode of construction may be traced throughout by the letters of reference which apply to both figures.

29. We shall, however, confine ourselves to fig. 11 (which is here laid down to a scale of $\frac{1}{4}$th part of an inch to the inch), wherein the line *a b c*, represents the plan of the cylinder with a portion of the straight line of the rail attached thereto; let the distance from *a* to *b* on the plan be the same as the distance from *a* to *b* on the line A B of the development in fig. 10. Here let the student refer back to article 23, fig. 9, page 632, vol. ii., and article 9, fig. 2, page 619, vol. ii., where the mode of determining the position of a plane, cutting obliquely through three given points on the surface of a cylinder, and the mode of performing the contour of the ellipse, produced by the cylindric section, are described; it will be observed, that the same methods therein propounded must be adopted. In the present case, the line *a b c* is the base line of the cylindric surface, the three heights *c f*, *b e*, and *a d* fig. 10, are the perpendiculars which give the position of the cutting plane over the points *c b* and *a* respectively. In laying down the intersecting line *i h*, upon the plane of the base of the cylinder it is of little importance whether we take the entire length of the lines *c f*, *b e*, and *a d*, or of any proportionate part of each, inasmuch, as we arrive at the same result by substituting one-half or one-fourth of the entire height of each; in the present case, as will be seen from the lines *a d*, *b e*, and *c f*, in fig. 11, they are taken at one-fourth of the entire heights of each of the lines *a d*, *b e*, and *c f*, in fig. 10. The elliptic curve of the cylindric section, which forms the central elliptic line of the face-mould, will require the same method of procedure as that adopted in article 9, fig 2, page 619, vol. ii., by which rule also the inner and outer curves of the section of a hollow cylinder, whose shell is equal in thickness to the width of the rail, may thus be obtained; these curves we have shewn in fig. 11 by the dotted elliptic lines, which surround the central line *n m* of the face-mould; but if our face-mould (in such a case as the present) were constructed so as to form a perfect section of the shell of a hollow cylinder, and the outline thereof were marked upon the faces of the plank at the proper pitch, so that by cutting the cylindric surfaces of the quadrilateral solid (as referred to in articles 4 and 5, page 619, vol. ii.) out of the plank, by means of the saw-cutting in the direction of the vertical surfaces of the cylinder, we should find (however strictly scientific the process may be) that much waste of material would be made by the requirements rendered necessary in the formation of the joints. We may observe, however, that it is only in cases like the present, where a great number of winders are introduced, and where small well-holes are adopted, that it becomes necessary to deviate from the general rule.

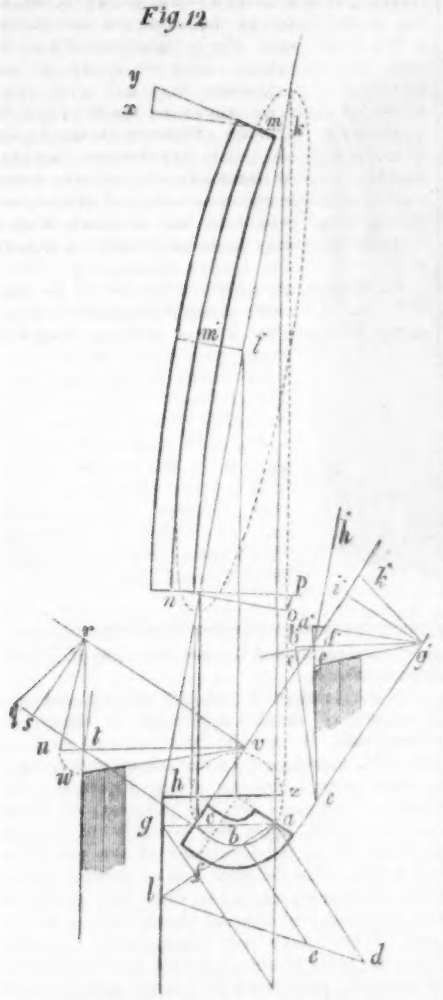
30. Hence, then, by articles 16 and 17, page 620, vol. ii., we have shewn the proximity which exists between the line or arris produced by

Fig. 11



winding the development of the line of heights round the surface of the cylinder; and that, which is produced on the same surface by the inter-section of the cutting plane, made to pass through any three given points which approximate nearest to the line of heights. From this it will be seen that the central line *m n* of the face-mould approximates very nearly to the centre line of the hand-rail; and as our line of heights is made to pass through the centre of the rail, it therefore follows, that if we mark off a parallel width of 1½ inches (one-half the width of the rail), on each side of the central line *m n*, we shall have a face-mould, which, when marked on both surfaces of the plank, each face being brought directly opposite the other, the solid may cut out of the plank, of substance sufficient for the formation of our rail when moulded to its finished shape.

Fig 12



31. But we are first to determine not only the width for a face-mould of this description, but also to lay down such lines as may enable us to work the butt-joints with accuracy. Having already determined the points *m* and *n*, in the central elliptic curve of the face-mould, let us proceed to find the bevels, not only for the ends of the face-mould, but also the bevels of the ends across the thickness of the plank. Thus to find the bevel for the end of the wreathed portion of the rail, contiguous to the straight part of the rail, over the upper range of flyers—in fig. 10, take any point *h e* in the line *f c* draw *h g* perpendicular to *f c*, cutting the line of the butt-joint *f g* in the point *g*: in fig. 11, draw a line from O in the centre of the circle on the plan of the rail through the point *b'*; also draw the line *e' g'* parallel thereto; draw any line *e a'* parallel to the intersecting line *h i*; make the perpendicular distance of the point *d'* from the line *e g'*, equal to *h g* in fig. 10. Through the point *d'* draw the line *b' g'* at right angles to *a' e'*; make *d' a'* equal to *h f* in fig. 10; join *a' g'*, and draw the line *d' h'* parallel to *h k*, intersecting the line *a' g'*, as shewn in the figure in the point *i*. From this point of intersection, and with one point of the compasses in the point *d'*, describe the dotted circular line, cutting the line *b g'* in the point *b'*; join *b' e'* from which let fall the perpendicular line *c' d'*; and with *d'* as a centre, describe the circular line *c' f'*, cutting *d' e'* in the point *f'*; join *f' g'*, and the angle *e' f g'* is the bevel which is to be applied to the end of the face-mould in forming the butt-joint across the thickness of the plank.

32. Again, to find the bevel or end of the face-mould for our guidance in marking the face of the plank: having already drawn the ordinate line, *o n*, at right angles to *h k*, make the distance *o n* equal to *d' c'*, also make the perpendicular line, *o p*, equal to *b' d'*, and through the points, *n p*, draw the line across the end of the face-mould, as shewn in the engraving, which is the end of the face-mould required. The bevels for the opposite end of this face-mould are obtained in a similar manner. Let the line of the butt-joint, through the point *d* of the development, fig. 10, form the hypothenuse to a right-angled triangle, whose base, *k l*, is parallel to the line A B. In fig. 11 draw a line through the centre O of the circle and the point *a* of the plan of the rail; let this line be produced to the distance of the points *t* and *q*, as shewn in the engraving. At any distance from the point *q*, draw the line, *r v*, parallel to *q t*; make the triangle, *q r s*, in fig. 11, similar, in all respects, to the triangle, *k l i*, in fig. 10; parallel to *g i* draw the line *r t*, cutting the line *q t* in *t*; from the point *t*, draw the line *t v* at right-angles to the line *r t*, and cutting the line *r v* in the point *v*. Then, with the line *r t* as a base, form a right-angled triangle, whose perpendicular, *t u*, make equal to *q s*. With the point *t* as a centre describe a circle touching the nearest point of the hypothenuse, *r u*, and cutting the line *r t*, produced in the point *w*, join *w v*, and the angle which it forms with *t w* will be the bevel to be applied across the thickness of the plank.

33. The direction of the end of the face-mould through the point *m* may be ascertained in the following manner:—Produce the ordinate line through the point *m* to *x*, make the distance, *m x*, the same as *r t*; from the point *x* let fall the perpendicular line *x y*, which make equal to *t u*; next draw the line *y m*, which, when produced across the width of the face-mould, will form the position of the end thereof.

34. The bevels for the other portion of the wreathed rail may be obtained in a similar manner to those here shewn.

35. The more important use of these bevels are for the purpose of constructing the jointing-box (which we shall hereafter describe), without which it will be next to impracticable, by the use of the plane and the bevels only, to work to that degree of truth which the nature of the work requires. The shaded parts in the figures shew the thickness of the plank, on which a centre line is drawn, also shewing by the end thereof what allowance should be made beyond the centre of the butt-joint for the obliquity of the planes of the butt-joints with the planes of the faces of the plank.

PROPOSED NEW PARK AT BATTERSEA.

Public attention has recently been directed to the formation of a new park in Battersea-fields. It has been ascertained that 500 or 600 acres of land might be purchased there at very moderate price; and if half of it only were appropriated to the public as a park, the other half would, if let for building, most likely produce sufficient rental to pay all expenses; and it would make a valuable place of recreation to the public, who could get easy access to it from the most crowded parts of London. The steam-boats have become a very important means of transit; they still appear to be increasing very much, and probably they cannot have too much encouragement. By diverting the busy traffic of our streets to the river, they relieve the crowded thoroughfares of the town, and they have already proved themselves to be important auxiliaries in the cleansing of the river and its shores.

By means of these boats this park would be accessible to a vast number of all classes of persons who live on both sides of the Thames, including the whole extent of London, a length of 7 or 8 miles. The poorer class of persons could get there by the steam-boats at a less expense than they can get a change of air in any other way.

Another of the advantages connected with the purchase of this land at Battersea, would be that from its position by the side of the Thames, there would be facilities for making large pieces of water. In summer these might be changed, if necessary, every tide; and they would furnish an excellent bathing-place for the working population in hot weather. At present the working classes have no means (or at best very limited means) of bathing. These baths might be so inclosed by plantations as to prevent them from being in any way offensive, and on that account would be much fitter for the purpose than the Serpentine River, where the bathing is always a great nuisance, and so offensive, as to drive many persons from the park, and where, even if this objection did not exist, there is not a tenth part of the space requisite for these purposes. Besides, any bathing-places made here would not only have the advantage of the water being frequently changed, but they might be so regulated as to be perfectly free from danger, by standing at any desired depth, being affected neither by dry weather nor by floods.

A further advantage, it is obvious, which would result to the population of London of all classes (and one which would be attended by not one shilling additional expense), would be the very perfect skating-ground which these pieces of water would afford in winter. Now the ground is of comparatively little value at present, and therefore very extensive means of promoting the health and recreation of the public could be acquired for a small sum. The number of persons who would take advantage of it would be immense, and however desirable it may be (and it undoubtedly is so) to widen our crowded thoroughfares, and to improve our over-populated districts, yet some outlay would not be misapplied in the acquisition and inclosure of spaces on the immediate outskirts of the town where there is little if any building at present to remove; and where, consequently, improvements could be made at comparatively small expense, to make good communications and airing places to which the public would be tempted to resort, and above all, in the selection, when opportunities offer, of sites having the river for their leading highway—a highway subject neither to the wear and tear, nor the expensive repairs, nor the dusty and inconvenient transit in dry weather of ordinary roads, and by which it is obvious no one can travel without, by that alone, whatever may be his occupation, enlarging his stock of health.

Mr. Thomas Cubitt, the eminent builder, has the credit of having first proposed this improvement. The daily observation and extensive intercourse which this gentleman has with artisans and working people of all sorts, his means of knowing their reasonable wants and their real value, and the unusual interest he takes in whatever concerns the health and comfort of the poorer classes of our population, evidently led to the idea, and induced him to submit his philanthropic proposal to the consideration of her Majesty's Commissioners for the Improvement of the Metropolis, who, in their second report (the first being exclusively devoted to the embankment of the Thames), will doubtless refer to it at length.

Engineering in Egypt.—On the 28th of November, a dry dock at Alexandria, which has been about eight years in execution, and has cost Mehemet Ali half a million sterling, was opened, and the first vessel hauled in. According to the *Times*, it is constructed in deep water; and the engineer, a Frenchman, of the name of Mougel, had great difficulties to contend with from the nature of the soil, besides labouring under a peculiar disadvatage, owing to there being no tides in this port. The dock has been made on the model of that of Toulon; its length is 243 feet, and its width 72 feet, taken on a level with the sea. M. Mougel will shortly leave for France, and it is said that he has received from Mehemet Ali instructions to take all the necessary measures for the construction of the "barrage" of the Nile, which work, if ever completed, will be a great boon to Egypt. The site fixed upon, at present, for this purpose is the point of ramification of the Rosetta and Damietta branches of the river, about ten miles below Cairo. It will consist of two bridges, one over each branch of the Nile, both joining at the extreme point of the Delta. The bridges will be formed of a certain number of arches, and one arch of each bridge will be made with a lock, for the purpose of navigation. In the centre of the Delta, will be opened several canals, to which the water of the Nile will be allowed ingress, as it may be required.

New Books.

The Church Restorers: a Tale, treating of Ancient and Modern Architecture and Church Decorations. By F. A. Paley, M.A., Hon. Sec. Cambridge Camden Society. Van Voorst, London: 1844.

Three years ago, when the Cambridge Camden Society had but commenced the publication of their opinions, the *Dublin Review*, a Roman catholic organ, said their position was most inconsistent, and that "the good men who were so earnestly labouring for the revival of catholic church architecture must be convinced that we must have the catholic service revived, in the first place, before any real good could possibly be accomplished." At that time they resolutely *denied* any such conviction, but the tendency of their views was nevertheless sufficiently apparent to all who looked beneath the surface. Now-a-days they speak out more plainly, or at all events individual members do; and when each individually says the same thing, and the society, when they *do* speak collectively, coincide, it would be absurd to make any distinction; even though, as in the present case, the author state carefully in his preface, "that neither his publisher, nor the society with which he is connected, can be in the remotest degree responsible for any opinions expressed in the narrative."

The little book before us is one of those which have been justly termed "engines of polemical theology." Its intention is to prove the "meanness of protestantism" (p. 3), "the desecrations and profanities of protestantism" (p. ix), "the desolation of protestantism," and to shew what "hell-hounds of destruction" (p. 62) were let loose by the Reformation — the *glorious* reformation, as the author satirically terms it; and glorious it unquestionably was, notwithstanding the excesses which disfigured it, or the sneers of a disguised jesuit. The advantage of daily mass, cressets constantly burning, incense, and holy water, is quietly hinted. He cannot hope that we "shall *yet* get back our monasteries" (p. 179); he urges the propriety of prayers for the dead (p. 22), and devotes several pages to induce a more unlimited belief in miraculous cures at holy fountains, and the preservation of saints' bodies "entirely incorrupt," than is at present general.

The deep chancel, the screen to separate the clergy from the laity,* the rood above it, and all the other fittings and arrangements in use when the church was Rome's, are to be introduced in our new edifices. And with these fittings, Mr. Paley does not blink it, the rites and ceremonies in accordance with them are to be restored also. He says (p. 190), "In Christian architecture, we find a definite use for every single part of a secular as well as of a religious edifice. Now the question is this; can we retain the form, irrespective of the use, without violating the fundamental principles of architecture?" and then he answers unequivocally, "*Clearly we cannot.*"

Far be it from us to speak disrespectfully of a creed because it differs from our own (our conviction of the weakness of human judgment, of our own fallibility, would prevent us); and if this book were written by an honest Romanist, we should have little to do, perhaps, but to thank him for some zealous efforts to protect old memorials of Christian art from the injuries of time and the ignorance of men. As it is, however, we say that it is a disgrace to its author and the college to which he belongs, and denounce it as an insidious attempt (one of many, or it would not require notice) to introduce theological opinions of the most dangerous character.

Conversationslexicon für bildende Kunst. Band I. Williams and Norgate, Henrietta-street, Covent-garden: 1844.

This work promises to be a very complete encyclopædia of architecture and building, and embraces all the arts and sciences connected with them. The volume now before us, consisting of 640 closely-printed pages profusely illustrated, is occupied solely by letter A, and contains some able articles on Grecian and Egyptian art (*Aeginetische kunst; Aegyptische kunst*), acoustics (*akustik*), &c., &c. When it is further advanced, we shall examine it more carefully, and transfer to our pages some of the information it contains.

To such of our readers as are acquainted with the language in which it is written, we do not hesitate to recommend the book itself. A knowledge of German, by the way, has become almost indispensable to architects, in consequence of the numerous excellent works relating to their art which have been recently published in that tongue. Architectural students who wisely seek to diversify their evening studies, cannot do better than apply themselves vigorously to it. Recreation may be found in change of labour.

Companion to the Almanac for 1845. Charles Knight, London.

The "British Almanac" for the new year, published by that able and enterprising caterer for the public, Mr. Charles Knight, contains its usual amount of information. The "Companion" to it, which more immediately concerns us, presents a general view of public improvements and the erection of new buildings, and although necessarily brief, forms, with preceding volumes, a valuable record. It contains views of the Royal Exchange, new church, Lever-bridge (executed in *terra-cotta*), Nunhead Cemetery Chapel, Lincoln's-inn new Hall, the Conservative Club, and the new Guildhall in progress at Bristol.

Description of the New Royal Exchange. Effingham Wilson, London: 1844.

A very pretty little volume, containing an historical notice of the former edifices, a description of Mr. Tite's new building, and a brief memoir of Sir Thomas Gresham, the founder of the original *burse*. It is illustrated by eighteen woodcuts, and nicely printed. The following engraving, which we introduce, includes a view of Gresham's tomb, in St. Helen's Church, Bishopsgate-street, a singularly interesting structure. Without explanation, which the work does not give, the reader would be led to conclude that the monument with columns and arches belonged to Gresham; this, however, is in memory of Sir William Pickering, who is said to have been the finest gentleman of his time "for worth in learning, arts, and warfare." We don't read the words "fine gentlemen" so now-a-days. Gresham's monument is in the farther corner. It is a large sculptured altar-tomb, covered with a marble slab, on which is inscribed, "Sir Thomas Gresham, Knight, bury^{d} Decem^{br} 15th, 1579."

GRESHAM'S TOMB.

* "Do we not instinctively feel that while the nave is, as it were, the vestibule, the chancel is the palace of the Great King" (reserved solely for the clergy?). "The chancel is the choir of the angels, the church triumphant, the Holy of Holies."—p. 105.

METROPOLIS IMPROVEMENTS.

(*From the 21st Woods and Forests' Report, not yet Published.*)

In the several lines of improvement authorized by the Acts 3 & 4 Vict., cap. 87, and 4 Vict., cap. 12, we have, since the dates of those Acts respectively, completed purchases to the amount in the whole of 457,844*l.* 15s 10d., and have contracted for further purchases to the amount in the whole of 191,617*l.* 15s. 10d.; and besides these, the purchases now remaining to be made in order to clear the whole of the ground required for completing the several lines of improvement, it is estimated will cost the further sum of 54,256*l.* 5s., or thereabout, viz.:—

1. In the line from Oxford-street to Holborn we have completed the purchases to the amount of 211,684*l.* 14s. 10d., and have contracted for further purchases to the amount of 56,979*l.* 3s. 4d., and besides these there remain to be made purchases estimated to cost the sum of 14,571*l.* 15s., or thereabout.

2. In the line from Bow-street to Charlotte-street, Bloomsbury, we have completed purchases to the amount of 70,958*l.* 18s. 3d., and have contracted for further purchases to the amount of 3,000*l.* 11s. 9d., and besides these there remain to be made purchases estimated to cost the sum of 17,595*l.*, or thereabout.

3. In the line from the London Docks to Spitalfields Church, we have completed purchases to the amount of 96,742*l.* 16s. 11d., and have contracted for further purchases to the amount of 30,236*l.* 8s. 7d., and besides these there remain to be made purchases estimated to cost the sum of 6,740*l.*, or thereabout.

4. In the line from Coventry-street to Longacre we have completed purchases to the amount of 77,078*l.* 5s. 10d., and have contracted for further purchases to the amount of 89,202*l.* 12s. 2d., and besides these there remain to be made purchases estimated to cost the sum of 8,097*l.* 10s., or thereabout.

5. In the line from East Smithfield to Rosemary-lane we have completed purchases to the amount of 1,420*l.*, and have contracted for further purchases to the amount of 12,200*l.*, and besides these there remain to be made purchases estimated to cost the sum of 7,252*l.* or thereabout.

By a statement of receipts and expenditure in respect of monies applicable to these improvements, it appears that of the sum of 500,000*l.* mentioned in our nineteenth report to have been borrowed of the Equitable Assurance Company for the purposes of these improvements, upon the security of certain portions of the land revenue of the crown in the county of Middlesex, and of monies arisen from interest on exchequer-bills and profit on the purchase and sale of those bills, in which part of that loan was temporarily invested, from the sales of old materials, and from rents of property purchased for the purpose of these improvements, there remained a balance of 1,420*l.* 6s. 6½d.

These funds being, as will be seen by the statement above-mentioned, nearly expended, we are taking measures for obtaining a further loan of 250,000*l.*, which, we find, it will be necessary to raise for the purpose of making the several remaining purchases requisite for the completion of these improvements.

Tollington Park New Church, Hornsey.—The trustees of the Metropolis Churches Fund have contributed 1,000*l.* towards the erection of this church; the Marquis of Northampton has intimated his intention of contributing 50*l.*, and the Rev. Mr. Venn has presented 200*l.*

West London Railway.—The London and Birmingham Railway Company has agreed to pay the existing liabilities of the West London Railway Company, amounting to 60,000*l.*, and to allow the shareholders one-fourth of the *gross* proceeds arising from the traffic on the railway and Kensington Canal. Application will be made to Parliament when it meets, for powers to extend the line to the Thames and to Knightsbridge. In its present incomplete state this railway has seemed to those who were ignorant of its real purpose a fit subject for ridicule. There can be little doubt that, when fully carried out, so as to give to the Great Western and the Birmingham a west-end terminus, and connect both these lines with the Thames, shares in it will become first-rate property.

Correspondence.

ARCHITECTURAL COMPETITIONS.

TO THE EDITOR OF THE BUILDER.

SIR,—I received a very oily letter from the Bursar of Magdalen College, stating that the College, "after long and painful deliberation," had decided in favour of Mr. Derrick's design for the Choristers' School, and terminating with some further civilities by way of thanks—without a word as to the very extraordinary favour granted to the successful (?) competitor.

If you or I were to break an agreement, we should be immediately proceeded against "with the utmost rigour of the law." Now, as the "Instructions to Architects" is to all intents and purposes an agreement, cannot all the competitors proceed against the College for the value of the drawings sent to them in pursuance of that agreement? For, in fact, the designs sent at the time appointed by them—*and not a fortnight after*—were to be considered as exclusively those in *bonâ fide* competition. The law may not help me in this case, but equity should do so. Perhaps you or some of your correspondents will oblige me by stating your opinion in your valuable paper. By-the-bye, don't you think this is a proper subject for the Institute to take notice of? I wish they would wake up a little; their slumbers have been very long, and, if I may judge by the little notice that has been taken of them, undisturbed.

ONE OF THE DUPED.

Dec. 30, 1844.

[We believe our correspondent is correct in saying the law will not help him. If, however, some of our legal friends will look carefully into the matter, and give us the result of their examination, they will earn the thanks of the profession. Few competitions are decided, wherein the agreement (morally, if not legally, binding) is not broken. In the case of the "Hospital for Consumption" last year, the committee threatened to refuse examination even to any design likely to cost more than the advertised amount, and yet ultimately selected a plan, the estimated cost of which was half as much more. They fancy, from the time which has elapsed since their scandalous decision, that they have escaped the castigation they deserved; they may find themselves deceived. —ED.]

ESTIMATES FOR WORK NOT TO BE EXECUTED.

SIR,—As much has been written in your valuable publication on the subject of the ignorance and partiality exhibited upon the decisions of architectural competitions, fully sympathizing with those who have spent their talents and time to gratify the curiosity or cupidity of self-appointed committees, I do hope the exposure in THE BUILDER of the system will be the means of checking the evil. To assist in so desirable a work, allow me to record on your pages a method (I trust a solitary one) of victimising the builders.

During the past autumn, a gentleman practising one of the liberal professions, not 50 miles from this place, conceived the idea of having a residence built suitable to the importance of his station in life; an architect was selected, and Elizabethan the style adopted. Plans were prepared and builders solicited to tender, but as the sanctity of the architect's office could not be invaded, tracings of the drawings with copies of the specification were to be furnished, upon each competitor paying down five guineas!! with the privilege of obtaining a copy of the quantities for four guineas more!!! which latter charge may be considered moderate, as duplicate and in some instances triplicate estimates of certain parts were to be made, the architect not having decided whether certain parts were to be worked in stone or cement. Seven builders were caught, taken in, and nicely done for; three of whom, I believe, paid the nine guineas; the rest only paid five each, for the privileges of making estimates of a building not likely to be executed, as the estimates of the builders exceeded that of the architect, who of course was the best informed upon the subject.

Now, Sir, if the architect was paid by his employer, and did not go upon the speculation of being paid by those who were willing to give up their time and experience, to enlighten him upon the cost of carrying his design into execution, I think they should receive back their money. The several amounts were as under:—

Ashby	£2,200 0
Grover	2,109 9
Haynes & Co.	2,100 0
Wood	1,997 0
Coleman	1,913 0
Sanham	1,832 0
Kirk	1,767 0

Should you consider the foregoing statement worthy a place in your columns, I should feel obliged, as an original subscriber, and

A BUILDER (NOT ONE OF THE VICTIMISED).

Dartford.

[We agree with our correspondent, that if the building be *not* erected,—if no prize be given, for the chance of obtaining which the builders each bought a ticket, so to speak,—their money should unquestionably be returned. We cannot vouch for the accuracy of the statement; indeed, we hope our correspondent may have been misled, and that one of those who tendered may yet be employed.—Ed.]

TEMPLETS AND MOULDS.

SIR,—A joiner and carpenter contracted for his branch in building a church, finding all timber and workmanship, and in his contract bound himself to make all moulds and templets of timber that might be wanted for the stone work. He has done so, and completed his contract satisfactorily; *to whom do the templets and moulds belong?* If you would be kind enough to insert the answer in your next number, you will confer a favour on me, and set the question at rest. C.

[To the carpenter.—ED.]

CARPENTERS' PRICES.

SIR,—I beg leave to inform you that your list of prices for timber and deals is apt to deceive the builders; for instance, the present price of Quebec red pine timber is 85s. to 90s. per load at first hand and by the cargo; Quebec oak is also from 105s. to 150s. ditto; spruce deals are from 17*l.* to 21*l.* per 120; Christiana deal 30*l.* to 32*l.* per 120 as 12 fs.; second pine planks are now 11*l.* to 12*l.* standard.—Your obedient servant, W. CLEAVE.

[No pains are spared to obtain a correct list, but prices vary so much, and are so influenced by circumstances, that the utmost we can do is to give an approximation to the truth.—ED.]

LEEDS BOROUGH GAOL.

SIR,—In the last number of THE BUILDER, it is stated, under the head of "Tenders," that we are the "inspectors for the committee," of the new gaol now erecting at this place; this is incorrect: we are the architects of that building, and no other party is, or has been employed in that capacity.

The building is being executed according to a design made by us, and approved by Sir James Graham, on the recommendation of Major Jebb, inspector of prisons.

There is another inaccuracy in the paragraph which mentions only three branches of work as being the third contract (C), whereas the plasterer's work, slater's work, plumber and glazier's work, painter's work, smith and founder's work, form part of the said contract and tenders were sent in for these branches also; the amount of the whole contract being about 15,000*l.*

When information is sent for insertion in your useful journal, it is the duty of those who furnish it to ascertain its correctness, in justice to the parties concerned and the public: if this course had been pursued by your correspondent, we should have had no cause to trespass upon your time with this explanation.—We remain, Sir, your most obedient servants,

PERKIN AND BACKHOUSE.

Leeds, Dec. 31st, 1844.

LIST OF NEW PATENTS RELATING TO ARCHITECTURE, ENGINEERING, &c., GRANTED FOR ENGLAND.

[SIX MONTHS FOR ENROLMENT.]

Louis Antoine Ritterbandt, of Gerrard-street, Soho, doctor of medicine, for certain improvements in preventing and removing incrustation in steam boilers and steam generators. December 2.

William Henry James, of Clements'-lane, London, civil engineer, for certain improvements in carriages for the conveyance of passengers and goods, and in the means of working the same. December 2.

James Winter, sen., of Wardour-street, Soho, upholsterer, James Winter, jun., of the same place, upholsterer, and William Lane, of Bedford-place, Russell-square, gentleman, for an improved scaffold, or mode of scaffolding, applicable also as a fire-escape for life and property. December 2.

James Nasmyth, of Patricroft, Lancaster, civil engineer, for certain improvements in machinery or apparatus for hewing, dressing, splitting, breaking, stamping, crushing, and pressing stone, or other materials. December 2.

Benjamin Seebohm, of Horton Grange, York, merchant, for an improved mode of manufacturing certain description of chains. December 4.

John Ryan, of Liverpool-street, surgeon, for certain improvements applicable to or in the construction of casks, barrels, or other vessels intended to contain wine, beer, fermented liquors, or other liquids or substances which are liable to fermentation or decomposition from exposure to the action of the atmosphere. December 7.

William Wilcocks Sleigh, of Saint James's-square, M.D., for the hydro-mechanic apparatus, which, by a certain combination of hydraulic and mechanical apparatus on well-known philosophical principles, is intended to supersede the use of fire and steam in working and propelling all kinds of machinery and engines. December 7.

Joseph Weiger, of Vienna, doctor of medicine, and surgeon-dentist, for improvements in the amalgamation, alloying and soldering of certain metals. December 12.

Charles Louis Felix Franchot, of Paris, engineer, for improvements in engines, to be worked by air or gasses. December 12.

William Malins, of Mansion House-place, London, ironmaster, for improvements in constructing roofs and other parts of buildings of iron or other metals, and in the preparation of the materials of which the same are or may be constructed. December 12.

Robert Heath, the younger, of Shidsgrove, Stafford, coal agent, for improvements in heating ovens and kilns used in the manufacture of china, bricks, tiles, and other earthenware. December 12.

Moses Poole, of Searle-street, London, gentleman, for improvements in the construction of fids for ship's masts and in the means of setting up ship's rigging. Being a communication. December 12.

Warren De la Rue, of Bunhill-row, manufacturer, for improvements in covering the surface of paper and other materials with colour and other substances. December 12.

Nathaniel Fortescue Taylor, of Vauxhall, engineer, for improvements in apparatus for measuring gas. December 18.

Arthur Wall, of Bisterne-place, Poplar, surgeon, for certain improvements in the manufacture of steel, copper, and other metals. December 18.

Benjamin Biram, of Wentworth, Yorkshire, gentleman, for certain improvements in oscillating engines, worked by steam, water, or other fluids, which are also applicable to the raising or propelling of fluids. December 21.

Charles Johnstone, of Southampton, Hants, engineer, for certain improved arrangements for raising ship's anchors, and other purposes. December 21.

Miscellanea.

NEW LUNATIC ASYLUM, &c. WARWICK.—The following motions will be submitted by C. H. Bracebridge, Esq., at the next Warwick Quarter Sessions:—"That the committee appointed at last Sessions do make every inquiry respecting the expense of erecting a county lunatic asylum, the probable number of lunatics, and a proper site."—"That the committee appointed at last Sessions, for the purpose of inquiring into the extent of alterations in the county prisons necessary to carry out the regulation of the Acts 4th George IV., c. 64, and 2nd and 3rd Victoria, c. 56, be continued, with power to confer with Major Jebb, and determine on the most feasible plan for altering the prisons, and to report at the Easter Sessions.

COMPETITION OUTLINES FOR ART UNION OF LONDON.—In reply to the advertised premium of 60*l.* for the best series of designs in outline, the committee of this valuable association have received nineteen sets of various degrees of merit. So soon as the decision is made, we shall allude to them at greater length.

NEW CHURCH AT FARRINGTON GURNEY, SOMERSET.—This church was consecrated on the 23rd ultimo by the Bishop of Salisbury. It is built from the design of Mr. Pinch, architect, of Bath, in the Norman style, and consists of a nave, 35 feet high, with a clerestory, supported by round pillars and semicircular arches; a deep chancel at the east end, and a tower, 55 feet high, at the west end. The whole length of the building is 91 feet, and the width 42 feet. The proportions and general effect of the interior appear to great advantage in consequence of the absence of galleries, excepting one in the tower for the singers. The chancel is lighted by a triple window, and one on either side, intended to be filled with stained glass. There is accommodation for about 350 persons in low, open seats, three-fourths of which are free and unappropriated for ever; the whole of these, with the gallery, altar-rail, desk, and timbers of the roof, are in imitation of dark oak. The pulpit, altar-piece, and font, are executed in Bath stone. The execution of the work was intrusted to Mr. John Thatcher, of Wellow, and Mr. David Aust, of Bath, whose contract for the building was under 1,200*l.*—*Somerset Gazette.*

MONUMENTAL BRASSES.—A monument lately erected in Stonehouse Church, Gloucestershire, to the memory of the Rev. Washington Hallen, has excited a good deal of attention. It is in imitation of the monumental brasses prevalent several centuries since, except that in the present instance the metal used is lead, which has apparently been molten and run into the sculpture. In the centre of the slab is a pedestal supporting a cross, which is bordered on the four sides by an inscription, the letters of which are formed of the above metal, as follows:—"Here rests Washington Hallen, a priest of the Anglican Church, born into this life 1797, departed 1837. *Pray we, as our Holy Mother teaches, for the perfect consummation of his bliss, both in body and soul,* through Jesus Christ." In addition to the principal centre cross, there is a small Maltese cross at each corner of the slab, and the whole effect of the monument is a revival of the antique models.—*Gloucester Journal.* [Yes; and an attempted revival of something more than antique models.—ED.]

LIVERPOOL SAILORS' HOME.—An association has lately been formed in Liverpool similar to the one in the eastern part of the metropolis for the purpose of providing a suitable dwelling for sailors while ashore. The first meeting of the members was held last week, and presided over by James Aiken, Esq. The subscriptions and donations announced amounted to 13,193*l.*, among which was one of 400*l.* from Messrs. Brocklebank. On the motion of Mr. Cotesworth, seconded by Mr. Henderson, the following gentlemen were appointed trustees:—Mr. Robertson Gladstone, Mr. Ralf Brocklebank, Mr. William Potter, Mr. Duncan Gibb, and Robert Rankin. In reply to a question put by a subscriber, the chairman stated that buildings north and south of the town had been spoken of and various plans had been suggested, but nothing could be done until they knew the result of their appeal to the public. On the motion of Mr. J. B. Yates, seconded by Mr. E. Molyneux, it was decided that the committee be recommended to take steps for obtaining the patronage of her Most Gracious Majesty to the institution.

ALTARS IN THE EAST.—There is no canon that I know of, says Bishop Heber, for placing churches with their altars eastward; and though this custom is certainly most ancient and usual, there have been many remarkable exceptions to it, from the cathedral of Antioch, built in the age immediately succeeding the apostles, down to St. Peter's, at Rome, which has also its sanctuary westward.

NOTICES OF CONTRACTS.

For Bodies, Wheels, Axles, Axle-boxes, Guards, Guard-plates, and Springs for 200 Coal Waggons, for the Taff Vale Railway. January 6.

For laying the Pipes required in the Hull New Water Works.—Thomas Thompson, Esq., Town Clerk, Hull, or Mr. Thomas Wickstead, Old Ford, near London. January 6.

For the supply of the following stones for pavements, namely, York Flag of 3 inches and 2½ inches thick, at per yard superficial; Castle Hill Stone, 2½ and 1¾ inches thickness, at ditto; Rock-hill of like respective thicknesses, at ditto; Aberdeen Granite, half sovereigns, at per ton; Devonshire Kerb, at per yard run, &c.—Francis Southgate, Clerk to the Paving Commissioners, Milton, next Gravesend. January 7.

For the execution of certain alterations at the Workhouse of the Coventry Union.—Thomas Hine, Clerk to the Board of Guardians, Coventry. January 8.

For Re-pewing Leverington Church, near Wisbeach.—The Rev. Henry Jackson, Leverington, or Mr. W. Adams, Architect, Wisbeach. January 7.

For Four Locomotive Engines and Tenders.—George King, 62, Moorgate-street, January 8.

For a Survey Plan and Valuation of the Township of Kimberworth, in Rotherham Yorkshire.—Mr. George Taylor or Mr. Richard Rhodes, Overseers of the Poor. January 8.

For taking down the present Bridge at Carrick-on-Shannon, and constructing a Stone Bridge of five segmental arches, with its approaches; building quays and harbour, forming wharfs, and deepening the bed of the river.—Edward Hornsby, Secretary, Shannon Commissioners' Office, Custom-house, Dublin. January 8, 1845.

For completing the Railway from Bishopstoke to Salisbury.—Alfred Morgan, Secretary, Nine Elms Station, Vauxhall. January 10.

For building a Sewer in Vine-street, Minories.—Joseph Daw, Sewers' Office, Guildhall. January 14.

For the erection of a Wesleyan Chapel at Hythe.—Mr. T. Pilcher, Stationer, &c., Hythe. January 21.

For making a Sewer in the town of Cambridge. The sewer to be cylindrical, and 2 feet diameter in the clear, the length will be about 385 yards, and the average depth about 9 feet.—Frederick Randall, Town Hall, Cambridge. January 21.

For the erection of the Railway Works between Leeds and Bradford, including fencing, earthwork, masonry, roads, and permanent way.—William Clarke, Secretary, Hunslet-lane Station, Leeds. January 27, 1845.

For the execution of Works on the Chester and Holyhead Railway.—1st. A distance of eight miles, or thereabouts. 2nd. A distance of twenty-two miles, or thereabouts. 3rd. A Tunnel through the promontory of Penmaen Back, near Conway.—George King, Secretary, 62, Moorgate-street. January 29, 1845.

For the supply of Wrought Iron Rails and the requisite number of Chairs for about 15 miles of the Southport and Euxton Junction Railway. The weight of rails to be from 60lb. to 70lb. per lineal 2 yards and 15 feet lengths, equal to from 1,500 to 1,800 tons of wrought iron, and about one-third of that quantity of cast iron.—Woodcock and Part, Solicitors, Wigan. January 31.

For erecting the Works of the third division of the Main Line of the Great Southern and Western Railway, being 11 miles, 6 furlongs, and 75 yards in length. Also for the first division of the Carlow branch, being 10 miles, 7 furlongs, and 160 yards; comprising excavation, embankments, bridges, culverts, &c.—William Taylor, Secretary, 3, College Green, Dublin. February 1.

For the supply of 11,000 feet of nine-inch cast-iron Pipes for a new line of Aqueduct to be laid in the Island of Malta.—Vin. Casolani, Collector of Land Revenue, Office of Land Revenue and Public Works, Valletta, Malta. March 31, 1845.

COMPETITIONS.

THE Committee of the Association recently formed in the Metropolis for the Construction of Baths and Wash-houses for the Labouring Classes, are desirous of obtaining Plans and Estimates for the Erection and Fitting-up of the First Establishment. The general basis of the plan can be seen at the Office, No. 3, Crosby-square. The author of the plan considered the best by the Committee will be selected to execute the work.

Plans and estimates are required for a Pauper Lunatic Asylum for the County of Somerset; the building to accommodate 300 patients, and to contain two Stories. The Committee of Visiting Magistrates wish it to be of a plain, cheerful character, but will not further fetter the architect by suggesting any particular arrangement as to the interior, its ventilation, warming, or otherwise. The ground selected contains 36 acres.—The Clerk of the Peace, Taunton. A Premium of 100*l.* will be adjudged for the best plan, and 50*l.* for the next best. January 22.

Plans and estimates are required for a Workhouse, to contain about 1,180 persons. The whole to be done in a plain and substantial manner, without any expensive embellishments. The plans and architects' estimates to be sent to Robert Mercer, the Clerk of the Clifton Union, Pennywell Road, Bristol, on or before the 17th of February next, and the Board of Guardians will adjudicate on the 28th. The architect producing the best plan in the estimation of the Board will be employed at a sum not exceeding 5 per cent. on the outlay, and a gratuity of 25 guineas will be given to the architect producing the second best plan in the opinion of the Board.

The Committee of the Art Union of London offer the sum of 500*l.* for an Original Picture illustrative of British History. Cartoons, six feet by four feet six inches, are to be sent in (as will be hereafter notified) by the 1st day of January, 1846, and from these the selection will be made. Artists must send specimens of their abilities as painters, if required so to do. The successful candidate must undertake to complete the finished picture, of the same size as the cartoon, by the 1st of January, 1847, and to superintend the engraving. The Committee wish it to be understood that their object in giving so long a period for the preparation of the cartoon is for the purpose of affording artists sufficient time thoroughly to study the various details of their compositions, and to produce in the cartoon a completely finished and well-wrought study for the picture. The Committee reserve to themselves the right of withholding the premium if works of sufficient merit be not submitted.

APPROACHING SALES OF WOOD, &c.

BY AUCTION.

January 6.—At Willesden: 318 Oak, Ash, and Elm Timber Trees.—Baker and Son, auctioneers, Manor Terrace, Kilburn.

January 7.—At 90, Blackman-street, Southwark: 600 cut Deals; 3,000 Fir Boards; 250 Pine Plank; 100 Red Pine Deals and Plank; 100 Yellow Deals; 3,000 feet of Quartering; 1,000 feet of Mahogany; 20 load of Ash, Beech, Birch, &c.—Southey and Son, auctioneers, 191, Tooley-street.

January 7, 1845.—At the Hall of Commerce, Threadneedle-street: 1,232 logs of St. Domingo Mahogany of superior quality and large dimensions; also 3 logs of Satin Wood; 182 logs of pencil cedar; 850 lancewood spars.—Thomas Edwards, Broker, 1, Pinner's-hall, Great Winchester-street.

January 17, 1845.—At Garraway's Coffee-house, Cornhill: 10,000 Baltic and Swedish Deals and Battens; 10,000 Colonial Yellow Pine and Spruce Deals.—E. D. Warrington, broker, 15, New City Chambers.

TO CORRESPONDENTS.

"J. M. Newport."—*Will our correspondent inform us in what respect his mode of drawing elliptical arches of large span, by means of two figured rods working on pins at the two foci, is superior to the common mode, wherein a cord the length of the span, and secured at the two ends, occupies the place of the rods?*

"New Flooring Dog."—*The model submitted by Mr. Snowball, although ingenious, is not likely to supersede the present form. The lever is more effectual than wedges in driving the boards together. The inapplicability of the new dog to joists and trimmers of various sizes is likewise an objection. The model is left at the publisher's, with thanks.*

"A Young Architect."—*We will inquire.*

"John Howe" *will find an answer in another part of the Journal. The official referees are Mr. James White Higgins and Professor Hosking, Trafalgar Square.*

"William John Lea."—*The sketch is left at the office, with many thanks.*

"J. W. W., Jun.," *next week.*

"J. J. F." "H. G." "J. S." "H. S." *and* "Nauticus" *received.*

A correspondent wishes to know what form it is best to adopt in the construction of Pot Kilns for common red ware.

*** *We have received several letters requesting us to give, in a tabular form, a list of the New District Surveyors and their official residences; immediately they are all fixed and have received a Magistrates sanction, agreeably to the Act, it is our intention to comply with the wishes of our correspondents.*

APPOINTMENT.

The Commissioners of Sewers for Westminster and part of Middlesex are about to appoint a Fourth Clerk of the Works at a salary of 120*l.* per annum. The appointment in the first instance will be for one year only, and take place at the Office, No. 1, Greek-street, Soho-square, on Tuesday, January 14.